

EXHIBIT 1
[FILED UNDER SEAL]

Page 1

1
2 IN THE UNITED STATES DISTRICT COURT
3 FOR THE EASTERN DISTRICT OF TEXAS
4 SHERMAN DIVISION
5 Case No. 4:20-cv-00957-SD
6 -----x
7 THE STATE OF TEXAS, et al.,

8
9 Plaintiffs,

10
11 - against -

12
13 GOOGLE LLC,

14 Defendant.

15
16 -----x
17 October 8, 2024
18 9:09 a.m.

19
20 Videotaped Deposition of MATTHEW
21 WEINBERG, Ph.D., taken by Defendant,
22 pursuant to Notice, held at the offices of
23 Norton Rose Fulbright US LLP, 1301 Avenue
of the Americas, New York, New York, before
Todd DeSimone, a Registered Professional
Reporter and Notary Public of the State of
New York.

24
25 Job No. CS6918901

<p>1 2 APPEARANCES: 3 THE LANIER LAW FIRM, PC 10940 West Sam Houston Parkway North 4 Suite 100 Houston, Texas 77064 5 Attorneys for Plaintiffs BY: ALEXANDRA ABSTON, ESQ. alex.abston@lanierlawfirm.com ZEKE DEROSE III, ESQ. (Via Zoom) zeke.derose@lanierlawfirm.com MELONIE DEROSE, ESQ. (Via Zoom) melonie.derose@lanierlawfirm.com 9 10 NORTON ROSE FULBRIGHT US LLP 11 2200 Ross Avenue Suite 3600 12 Dallas, Texas 75201 Attorneys for Plaintiff 13 BY: JAMES S. RENARD ESQ. james.renard@nortonrosefulbright.com 14 15 - and - 16 NORTON ROSE FULBRIGHT US LLP 17 98 San Jacinto Boulevard Suite 1100 18 Austin, Texas 78701 BY: ETHAN GLENN, ESQ. ethan.glenn@nortonrosefulbright.com 20 21 22 23 24 25</p>	<p>Page 2</p> <p>1 WEINBERG, Ph.D. 2 THE VIDEOGRAPHER: Good morning. 3 We are going on the record at 9:09 a.m. 4 eastern standard time on October 8th, 5 2024. 6 Please note the microphones are 7 sensitive and may pick up whispering 8 and private conversation. Please mute 9 your phones at this time. Audio and 10 video recording will continue to take 11 place unless all parties agree to go 12 off the record. 13 This is media unit one of the 14 video-recorded deposition of Matthew 15 Weinberg in the matter of the State of 16 Texas v. Google LLC, filed in the 17 United States District Court, Eastern 18 District of Texas, case number 19 4:20-CV-00957. The location of the 20 deposition today is 1301 Sixth Avenue 21 in New York, New York 10019. 22 My name is Adam Venturini 23 representing Veritext and I am the 24 videographer. The court reporter today 25 is Todd DeSimone from the firm</p>
<p>1 2 APPEARANCES: (Continued) 3 GIBBS & BRUNS LLP 1100 Louisiana 4 Suite 5300 Houston, Texas 77002 5 Attorneys for Defendant BY: KATHY D. PATRICK, ESQ. kppatrick@gibbsbruns.com MICHAEL DAVIS, ESQ. mdavis@gibbsbruns.com ROBIN C. GIBBS, ESQ. (Via Zoom) rgibbs@gibbsbruns.com 9 10 11 ALSO PRESENT: 12 LUKE WOODWARD, Texas OAG (Via Zoom) 13 TREVOR YOUNG, Texas OAG (Via Zoom) 14 JONATHAN JAFFE (Via Zoom) 15 ADAM VENTURINI, Videographer 16 17 18 19 20 21 22 23 24 25</p>	<p>Page 3</p> <p>1 WEINBERG, Ph.D. 2 Veritext. I'm not authorized to 3 administer an oath, I'm not related to 4 any party in this action, nor am I 5 financially interested in the outcome. 6 Counsel and all present remote 7 will be noted on the stenographic 8 record. Will the court reporter please 9 swear in the witness and then counsel 10 may proceed. 11 * * * 12 M A T T H E W W E I N B E R G, 13 Ph.D., 14 called as a witness, having been first 15 duly sworn, was examined and testified 16 as follows: 17 EXAMINATION BY MS. PATRICK: 18 Q. Good morning, Professor. 19 A. Good morning. 20 Q. Who is Paul Milgrom? 21 A. Paul Milgrom is an economist. 22 Q. Is a Nobel Prize winning 23 economist; is that right? 24 A. Yes. 25 Q. What did he win the Nobel Prize</p>

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1 WEINBERG, Ph.D. 2 for, sir? 3 A. He won the Nobel Prize in 4 economics. 5 Q. For what area of study in 6 economics, sir? 7 A. I don't recall the exact 8 citation, but it would have been within 9 auction theory. 10 Q. And what is auction theory, 11 sir? 12 A. Auction theory is the study of 13 how to allocate goods such as items amongst 14 many -- sometimes many, sometimes one, 15 interested buyers. There could be several 16 objectives, sometimes you might want to 17 make the buyers as happy as possible, 18 sometimes you might want to generate as 19 much revenue as possible, but auction 20 theory is the study of situations like 21 this. Most of auction theory involves 22 transfer of money from the buyers to the 23 seller, but there is also a study of 24 auction theory where you may be restricted 25 in how many can be used.	Page 6	1 WEINBERG, Ph.D. 2 means that in his report he tries to start 3 from some facts. Based on those facts he 4 tries to apply auction theory to draw some 5 conclusions, and as it refers to my 6 previous answer, one of the things that I 7 claim is that many of those conclusions are 8 incorrect. 9 Q. Okay. So just to be clear, you 10 are going to tell the jury the Nobel Prize 11 winner is wrong? 12 MR. RENARD: Objection to the 13 form. 14 A. In this case, yes, I do believe 15 that the report written by the Nobel Prize 16 winner, Paul Milgrom, has incorrect claims 17 in it. 18 Q. Are there parts of 19 Dr. Milgrom's report you believe are 20 correct? 21 MR. RENARD: Objection to form. 22 A. Sure, I can think of one 23 example. There is a theorem in his report 24 that is the same theorem I include in my 25 own report, and that theorem is correct.	Page 8
1 WEINBERG, Ph.D. 2 Q. Is Dr. Milgrom testifying as an 3 expert for a party in this case, sir? 4 A. Yes. 5 Q. For whom? 6 A. For Google. 7 Q. And is his testimony in the 8 same area, namely auction theory, for which 9 he won the Nobel Prize? 10 MR. RENARD: Objection to form. 11 A. I believe his testimony is 12 within auction theory. 13 Q. And you are here to tell the 14 jury that the Nobel Prize winner is wrong 15 in the opinions he expresses in this case? 16 MR. RENARD: Objection to form. 17 A. One of the claims I will make 18 is that many of the claims in his report is 19 wrong, that's correct. 20 Q. And you used the term "claims," 21 sir, and I want to understand the sense in 22 which you are using it. What do you mean 23 by a claim? 24 A. I would say I'm using "claim" 25 maybe as a synonym for conclusion, which	Page 7	1 WEINBERG, Ph.D. 2 Q. Which theorem is that? 3 A. Without seeing his report, I 4 couldn't tell you what label it is in his. 5 I can tell you what it is in mine. 6 (Weinberg Exhibit 1 marked for 7 identification.) 8 Q. Are you looking at what's been 9 marked as Exhibit 1? 10 A. Yes, I am looking at what has 11 been marked as Exhibit 1. 12 Q. And just for the jury, can you 13 identify Exhibit 1 as the opening report 14 you -- is that your expert report dated 15 June 7th, 2024? If you look at the cover, 16 sir. 17 A. Yes, that is correct. 18 Q. And that's your signature on 19 the front of it? 20 A. Yes, that is correct. 21 Q. All right. And so you were 22 going to tell me which theory that you 23 think Dr. Milgrom is deploying correctly. 24 A. So in my report on page 127, it 25 looks like paragraph 226(a), I state "If	Page 9

<p>1 WEINBERG, Ph.D.</p> <p>2 all advertisers responded optimally to</p> <p>3 DRSv2, no advertiser would bid in the</p> <p>4 dynamic region, and therefore DRSv2 would</p> <p>5 be equivalent to no DRS." And Professor</p> <p>6 Milgrom has a theorem in his own report</p> <p>7 that states the exact same thing.</p> <p>8 Q. We are going to come back to</p> <p>9 Professor Milgrom's report. I want to</p> <p>10 continue on down the road for a moment.</p> <p>11 Dr. Milgrom is an economist,</p> <p>12 you are not; is that right?</p> <p>13 A. I do not have a Ph.D. in</p> <p>14 economics.</p> <p>15 Q. And your undergraduate degree</p> <p>16 is in math; is that right?</p> <p>17 A. Yes, that's correct.</p> <p>18 Q. And your Ph.D. is in computer</p> <p>19 science; is that right?</p> <p>20 A. Yes, that's also correct.</p> <p>21 Q. So you have not received any</p> <p>22 prizes in economics, as Dr. Milgrom has,</p> <p>23 true?</p> <p>24 MR. RENARD: Objection to form.</p> <p>25 A. I did receive a dissertation</p>	<p>Page 10</p> <p>1 WEINBERG, Ph.D.</p> <p>2 there are definitely people who would call</p> <p>3 that the Nobel Prize of computer science.</p> <p>4 Q. And you have not received the</p> <p>5 Turing Award; is that true?</p> <p>6 A. That is correct, I have not</p> <p>7 received the Turing Award.</p> <p>8 (Weinberg Exhibit 2 marked for</p> <p>9 identification.)</p> <p>10 Q. Now, let's look at your --</p> <p>11 while we are on the topic of identifying</p> <p>12 things, can you identify Exhibit 2 as your</p> <p>13 rebuttal report dated September 9th, 2024?</p> <p>14 A. Yes, that is Exhibit 2.</p> <p>15 Q. And you agree that report has</p> <p>16 errors in it; does it not?</p> <p>17 A. Yes, the version you handed me</p> <p>18 does not have the errata that I submitted.</p> <p>19 Q. All right. An errata is a</p> <p>20 fancy Latin word for error, right?</p> <p>21 A. I'm actually not sure exactly</p> <p>22 what errata means.</p> <p>23 Q. Then why did you use the term</p> <p>24 "errata sheet" when you filed one?</p> <p>25 A. I know that errata -- what I</p>
<p>1 WEINBERG, Ph.D.</p> <p>2 award from the SIGecom, which is an</p> <p>3 economics and computing research group, and</p> <p>4 from the same -- the same research group I</p> <p>5 have also received a best paper award, and</p> <p>6 so that research group includes both</p> <p>7 economics and computer science.</p> <p>8 Q. Other than that, though, you</p> <p>9 are aware there are recognized prizes in</p> <p>10 economics like the Nobel Prize, the Clark</p> <p>11 Medal, and so on, you have not been awarded</p> <p>12 any of those, true?</p> <p>13 MR. RENARD: Objection to form.</p> <p>14 A. I have not won a Nobel Prize or</p> <p>15 the Clark Prize.</p> <p>16 Q. And there is -- there is no</p> <p>17 Nobel Prize for computer science; is that</p> <p>18 right?</p> <p>19 A. That's correct, there is no</p> <p>20 Nobel Prize in computer science.</p> <p>21 Q. There is something called the</p> <p>22 A.M. Turing Award though, right, it is</p> <p>23 understood in your field to be the</p> <p>24 equivalent of it?</p> <p>25 A. It is the ACM Turing Award, and</p>	<p>Page 11</p> <p>1 WEINBERG, Ph.D.</p> <p>2 meant to say was I do not know whether the</p> <p>3 word "errata" is a Latin word that</p> <p>4 literally means error. I know that errata</p> <p>5 is a term used for submitting a list of</p> <p>6 errors that are being fixed in a written</p> <p>7 document.</p> <p>8 Q. And with regard to your</p> <p>9 rebuttal report, you submitted a list of</p> <p>10 errors that you found in your report,</p> <p>11 right?</p> <p>12 A. Yes, I submitted an errata</p> <p>13 sheet.</p> <p>14 Q. Have you reviewed Exhibit 1,</p> <p>15 your opening report, sir, since you filed</p> <p>16 it?</p> <p>17 A. Yes.</p> <p>18 Q. Did you note any errors in that</p> <p>19 that you need to correct today?</p> <p>20 A. No, I do not.</p> <p>21 Q. So as we sit here, subject to</p> <p>22 the errors you corrected in Exhibit 2, you</p> <p>23 intend to stand by your rebuttal report; is</p> <p>24 that right?</p> <p>25 A. That is also correct. Can I</p>

1 WEINBERG, Ph.D. 2 make a very slight modification to my 3 answer about the opening report? 4 Q. Sure. 5 A. In my rebuttal report it 6 will -- it will take me a second to find 7 the precise footnote, there were a few 8 footnotes, I will give you one example -- 9 Q. And you are in which report, 10 sir? 11 A. I'm in the rebuttal report. 12 Q. Okay. 13 A. So there are a few footnotes in 14 my rebuttal report which are updating the 15 opening report. So footnote 582 is one 16 example which says -- so footnote 582 is on 17 the sentence in paragraph 448 that says 18 "Second, RPO was concealed from buyers and 19 Google took numerous steps to avoid 20 detection," and footnote 582 notes "I have 21 previously noted that I do not consider 22 Google's 'disclosure' of RPO to 23 meaningfully disclose RPO. My opinion 24 remains the same for the entire duration of 25 RPO." 1 WEINBERG, Ph.D. 2 And there are several footnotes 3 like this through the section in which I 4 discuss RPO where I note that in my opening 5 report I refer to a disclosure of RPO, and 6 in my rebuttal report, after seeing more 7 documentation, I consider that to have been 8 not a transparent disclosure. So I just 9 wanted to clarify that although that is 10 stated in my rebuttal report, that that is 11 the only example. 12 Q. That is the only or is not the 13 only example where you have used your 14 rebuttal report to correct your primary 15 report? I didn't understand your use of 16 the word "only." 17 A. Sorry, I believe that is the 18 only example. 19 Q. Just to press the point, you 20 said there are a few footnotes in my 21 rebuttal report which are updating the 22 opening report, and you say footnote 582 is 23 one example. 24 A. Sure. 25 Q. I just want to be sure I have	Page 14 1 WEINBERG, Ph.D. 2 gathered all the others, sir. 3 A. Sure. What I meant is this is 4 the -- they are all footnotes of the 5 same -- saying the same thing. 6 Q. So it is all related to RPO? 7 A. They are all related to RPO, 8 that is correct. 9 Q. All right. And who was it that 10 called those additional documents to your 11 attention that you reviewed that led you to 12 correct your prior report by means of 13 footnotes here? 14 A. It was a combination of myself 15 searching through documents and tracing 16 through documents that were cited in the 17 Milgrom report and the Wiggins report. 18 Q. Okay. You did that work 19 yourself? 20 A. Yes, I did that work myself. 21 Q. And so we have what you now 22 consider to be an error in your observation 23 about reserve price optimization in your 24 opening report that you have corrected in 25 your view in your rebuttal? Page 15 1 WEINBERG, Ph.D. 2 And there are several footnotes 3 like this through the section in which I 4 discuss RPO where I note that in my opening 5 report I refer to a disclosure of RPO, and 6 in my rebuttal report, after seeing more 7 documentation, I consider that to have been 8 not a transparent disclosure. So I just 9 wanted to clarify that although that is 10 stated in my rebuttal report, that that is 11 the only example. 12 Q. That is the only or is not the 13 only example where you have used your 14 rebuttal report to correct your primary 15 report? I didn't understand your use of 16 the word "only." 17 A. Sorry, I believe that is the 18 only example. 19 Q. Just to press the point, you 20 said there are a few footnotes in my 21 rebuttal report which are updating the 22 opening report, and you say footnote 582 is 23 one example. 24 A. Sure. 25 Q. I just want to be sure I have	Page 16 1 WEINBERG, Ph.D. 2 gathered all the others, sir. 3 A. Sure. 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This is Exhibit 2. 8 Q. Okay. This is your rebuttal 9 report? 10 A. This is my rebuttal report. 11 Q. All right. Tell me where you 12 are. Page? 13 A. I am on page 144, paragraph 14 476. 15 Q. Okay. 16 A. So it says "First, my opening 17 report stated both that: (1) Google 18 concealed information that is material to 19 both publishers and advertisers during the 20 period RPO was concealed." So that is in 21 my opening report. I cited at paragraph 22 273 of my opening report. And that 23 statement has no errors in it. 24 However, one might read that to 25 imply that there was a period where RPO was
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<p style="text-align: right;">Page 18</p> <p>1 WEINBERG, Ph.D. 2 not concealed, and in my rebuttal report I 3 clarify in footnote 619 "Since issuing my 4 opening report, I have reviewed further 5 documents regarding the claims disclosure 6 of RPO by Google. These documents led me 7 to believe that the disclosures by Google 8 regarding RPO were insufficient. I now 9 consider RPO to be concealed for its entire 10 existence since Google's disclosures 11 withheld vital information regarding RPO." 12 So that is an example of what I 13 mean when I answered your earlier question. 14 I guess I was trying to be extra 15 forthcoming, but I do not consider, for 16 example, the sentence to be an error, you 17 know, but there is maybe an update as the 18 footnote 619 notes. 19 Q. All right. So have you now 20 told me everything that you need to correct 21 in Exhibits 1 and 2 in order for me to have 22 a complete set of your accurate opinions? 23 A. Assuming that you have the 24 errata sheet, yes. 25 Q. Okay. So as you sit here</p>	<p style="text-align: right;">Page 20</p> <p>1 WEINBERG, Ph.D. 2 don't you? 3 MR. RENARD: Objection to form. 4 A. I believe you that it is Latin. 5 I am hesitant to testify under oath that it 6 is Latin. 7 Q. So you used a foreign word at 8 the top of that you didn't know what it 9 meant or where it came from? 10 MR. RENARD: Objection to form. 11 A. I know that the term 12 "curriculum vitae" is used I guess at least 13 among academics for their resumé and it 14 describes their work history, their 15 qualifications, and things like that. So I 16 know how the term is used even without 17 knowing with 100 percent certainty that it 18 is Latin. 19 Q. Did you ever take Latin in 20 school, sir? 21 A. I did not. 22 Q. All right. So let's look at 23 your experience here. Am I right that you 24 finished your undergraduate degree at 25 Cornell in math in 2010?</p>
<p style="text-align: right;">Page 19</p> <p>1 WEINBERG, Ph.D. 2 today, you are satisfied that Exhibits 1, 2 3 and the errata sheet contain your full set 4 of opinions about which you intend to try 5 to testify at the trial? 6 A. Yes, absolutely. 7 (Weinberg Exhibit 3 marked for 8 identification.) 9 Q. Okay. Let's talk about your 10 work history, sir. Do you have Exhibit 3 11 before you? 12 A. Yes, I do. 13 Q. And is that -- there is another 14 Latin word there. Can you pronounce it for 15 us, please? 16 A. You are talking about my CV, 17 curriculum vitae? 18 Q. Yes. 19 A. Yes. 20 Q. So CV, curriculum vitae, those 21 are Latin words again, right? 22 A. I will, again, trust you that 23 they are Latin words. 24 Q. You don't need to trust me 25 about that, sir. You know it is Latin,</p>	<p style="text-align: right;">Page 21</p> <p>1 WEINBERG, Ph.D. 2 A. Yes, that is correct. 3 Q. And you went straight from 4 there into your Ph.D. work at the 5 Massachusetts Institute of Technology in 6 Boston? 7 MR. RENARD: Objection to form. 8 A. Yes, after I finished my 9 undergraduate degree, after the summer, I 10 started my Ph.D. in the fall at the 11 Massachusetts Institute of Technology, 12 which is in Cambridge, which is a suburb 13 near Boston. 14 Q. And you received your Ph.D. -- 15 your Ph.D. thesis was something called 16 Algorithms for Strategic Agents; is that 17 right? 18 A. Yes, that's correct. 19 Q. What is an algorithm, sir? 20 A. An algorithm I would describe 21 as a step-by-step process that is concrete 22 and well defined that will take some input 23 and produce an output. 24 Q. Is an algorithm commonly used 25 as a way of describing how machines make</p>

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<p>1 WEINBERG, Ph.D. 2 decisions? 3 A. Some people might use it to 4 mean that. I personally would not use that 5 definition. 6 Q. How does computer science use 7 the term "algorithm" in connection with 8 computers? 9 A. So the field of computer 10 science I think would use the term 11 "algorithms" as I have defined it. If a 12 computer scientist wanted to explicitly 13 connect algorithms to computers, they might 14 describe it -- they might use it to mean 15 how code executes, and the reason they are 16 connected is that in order for a computer 17 to make decisions the computer would need 18 very concrete step-by-step instructions, 19 and so in order for a computer to do 20 anything it would need an algorithm to tell 21 it what to do. 22 The reason I made the 23 distinction is that algorithms are not 24 limited to code or machine decision-making. 25 Q. But algorithms can be a species</p>	<p>Page 22</p> <p>1 WEINBERG, Ph.D. 2 algorithmic mechanism design. 3 Q. All right. So your definition 4 of algorithm that you used is a 5 step-by-step process that is concrete and 6 well defined that will take some input and 7 produce an output; is that right? 8 A. Yes. 9 Q. Okay. And algorithmic 10 mechanism design, if you want to look at 11 paragraph 4 of your opening report, what's 12 a mechanism, sir?</p> <p>13 MR. RENARD: Objection to the 14 form.</p> <p>15 MS. PATRICK: What's 16 objectionable about asking him what a 17 mechanism is?</p> <p>18 MR. RENARD: Because mechanism 19 as used generally or as used in that 20 phrase? It is unclear and vague.</p> <p>21 Q. What is a mechanism, sir?</p> <p>22 MR. RENARD: Same objection.</p> <p>23 A. A mechanism as used in this 24 context, there are two kinds of definitions 25 that mean the same thing. One would come</p>
<p>1 WEINBERG, Ph.D. 2 of machine decision-making, right? 3 A. Algorithms could be used for 4 machines to make decisions, yes. 5 Q. In other words, the computer 6 has a series of steps in the algorithm it 7 follows to accomplish a given task? 8 MR. RENARD: Objection to form. 9 A. If a computer is using an 10 algorithm, then that computer would have a 11 series of steps it follows to complete a 12 given task. 13 Q. And so that's what an algorithm 14 is, and is that the sense in which you have 15 used it when you talk about your field of 16 expertise as algorithmic mechanism design, 17 that is the design of algorithms for 18 machines? 19 MR. RENARD: Objection to form. 20 A. I think there were two parts to 21 that question. For the first one, when I 22 used the phrase "algorithmic," I would say 23 that I am referring to the same definition 24 of algorithm that I used. For the second 25 one, that is not how I would define</p>	<p>Page 23</p> <p>1 WEINBERG, Ph.D. 2 more from the computer science view, which 3 would say that a mechanism is like an 4 algorithm but with incentives involved, and 5 so the distinction would be an algorithm 6 people typically think of as having an 7 input that is given and then the algorithm 8 processes the input and then an output is 9 produced, whereas the distinction of a 10 mechanism to an algorithm is that the input 11 would not necessarily be given, but there 12 would be some agents with incentives that 13 are providing the input and those agents 14 may be incentivized not to give you the 15 correct input. So that would be mechanism 16 as it differs from algorithm.</p> <p>17 The economics view may 18 introduce mechanism as different from a 19 game. So, for example, a game is thought 20 of as being given. There is a set of 21 players. Each player has a set of actions. 22 Based on the actions taken by all players, 23 each player gets some payoff and the game 24 is given, whereas a mechanism implies that 25 is there is a designer who is designing a</p>

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<p style="text-align: right;">Page 26</p> <p>1 WEINBERG, Ph.D.</p> <p>2 game for the players to play. And so those 3 definitions mean the same thing, but they 4 come from different perspectives, and so 5 that's how -- that's what mechanism means 6 in this context.</p> <p>7 Q. And so when you say your field 8 of expertise is algorithmic mechanism 9 design, are you talking about the design of 10 computerized algorithms that involve 11 incentives?</p> <p>12 A. It includes the study of 13 computerized algorithms that involve 14 incentives, but it is not restricted to the 15 computerized aspect.</p> <p>16 Q. Do you have any training in 17 psychology, sir?</p> <p>18 A. I believe I took one course in 19 undergrad.</p> <p>20 Q. Do you have any training in 21 behavioral economics?</p> <p>22 MR. RENARD: Objection to the 23 form.</p> <p>24 A. Some of my research concerns 25 behavioral economics. I do not have a</p>	<p style="text-align: right;">Page 28</p> <p>1 WEINBERG, Ph.D.</p> <p>2 the fact that we are trying to study how 3 agents actually behave rather than assuming 4 that they are rational.</p> <p>5 Q. Does your analysis -- does the 6 analysis you have done here assume 7 publishers are rational?</p> <p>8 A. I think maybe a distinction 9 that's better to make is you can be 10 rational with respect to the information 11 you have and you can be rational with 12 respect to information you have and 13 rational with respect to the full 14 information and those behaviors would be 15 different.</p> <p>16 So to tie that back to your 17 question, I would say that my analysis 18 is -- does not make assumption on 19 publishers being rational or not rational, 20 they both are consistent.</p> <p>21 Q. Okay. So as to publishers, you 22 make no assumption that any particular 23 publisher is or is not rational, true?</p> <p>24 A. I believe that all of my 25 conclusions are consistent with any</p>
<p style="text-align: right;">Page 27</p> <p>1 WEINBERG, Ph.D.</p> <p>2 degree in behavioral economics.</p> <p>3 Q. So what do you understand the 4 field of behavioral economics to be?</p> <p>5 MR. RENARD: Objection to the 6 form.</p> <p>7 A. So I would say there is one 8 view of game theory that tries to study 9 fully rational agents, and so this would 10 mean that when agents are given a game to 11 play they behave in a way that optimizes 12 their payoff, and so some examples of 13 solution concepts related to this would be 14 Nash equilibrium, best response, Bayes-Nash 15 equilibrium, things like this, and there is 16 a wide field of economics that has realized 17 that in practice agents often don't play 18 rationally, and the field of behavioral 19 economics, especially behavioral game 20 theory, studies how agents behave in 21 practice when faced with incentives.</p> <p>22 So I would say the economics 23 refers to the incentives or the game theory 24 refers to the fact that there was a game 25 they are playing, and behavioral refers to</p>	<p style="text-align: right;">Page 29</p> <p>1 WEINBERG, Ph.D.</p> <p>2 assumption on publishers as far as their 3 rationality is concerned.</p> <p>4 Q. Is that a yes, you make no 5 assumption one way or the other that 6 publishers are rational?</p> <p>7 A. I believe that is correct, yes.</p> <p>8 Q. All right. And how about ad 9 buyers, does your analysis make any 10 assumption one way or the other about 11 whether ad buyers are rational?</p> <p>12 A. My analysis assumes that 13 advertisers would rationally bid their true 14 value into a truthful auction. So let me 15 elaborate on that.</p> <p>16 An auction is a truthful, so 17 this second price auction would be an 18 example, if it is in every bidder's best 19 interest to bid their true value, and in 20 the case of a second price auction, this is 21 also a dominant strategy, and because it is 22 a dominant strategy to bid your true value, 23 a rational participant in a second price 24 auction who is informed that they are 25 playing a second price auction would bid</p>

<p style="text-align: right;">Page 30</p> <p>1 WEINBERG, Ph.D. 2 their true value. 3 Q. That's your assumption? 4 A. Sorry, to finish my -- 5 Q. Sorry, I didn't mean to 6 interrupt. 7 A. -- previous answer, that is -- 8 it follows my definition. So to back up 9 again, in game theory, rational would refer 10 to a player that is acting in their best 11 interest given the information they have, 12 and given that definition it is a theorem, 13 I believe I even stated it in my -- the 14 Background section of my opening report. 15 So, for example, in paragraph 16 47 of my opening report I introduce the 17 definition of truthful and provide an 18 example illustrating that in paragraph 48, 19 and I share that to note that a bidder 20 bidding their true value in a second price 21 auction, that is rational behavior, and to 22 repeat, that follows from the definition of 23 rational where rational means acting in 24 your best interest, observing that it is a 25 dominant strategy to bid your true value in</p>	<p style="text-align: right;">Page 32</p> <p>1 WEINBERG, Ph.D. 2 other opinions do not make this assumption. 3 Q. So there are circumstances in 4 your opinions where you do not assume 5 buyers act rationally, true? 6 A. There are circumstances in my 7 opinions that do not make any assumptions 8 on advertiser behavior. 9 Q. Such as? 10 A. For example, I am reading from 11 my rebuttal report, paragraph 446, on page 12 133, sorry, paragraph 446(d), I'm reading 13 it from my rebuttal report, but it is a 14 quote from my opening report, paragraph 15 281, which says "RPO would lead to a payoff 16 loss for advertisers since it leads to both 17 a decrease in impressions won and an 18 increase in the average price paid for 19 impressions won." 20 So this claim makes no 21 assumption on advertisers whatsoever. It 22 would hold no matter how the advertisers 23 behave. 24 Q. All right. Now, it is possible 25 to design an experiment to determine</p>
<p style="text-align: right;">Page 31</p> <p>1 WEINBERG, Ph.D. 2 a second price auction, which means that no 3 matter what anyone else is doing, you are 4 always best off by bidding your true value 5 and then concluding using mathematical 6 proofs that it is any rational player would 7 bid their true value in a second price 8 auction. 9 And tying it back to your 10 original question, in both my opening 11 report and my rebuttal report, I do assume 12 that advertisers who believe they are 13 playing a second price auction would 14 rationally bid their true value into that 15 second price auction. 16 Q. So as to ad buyers, you have 17 made an assumption of rationality, true? 18 A. For ad buyers some of my 19 conclusions assume that advertisers would 20 rationally bid their true value into a 21 second price auction in which it is a 22 dominant strategy to do so. 23 Q. So, again, that's a yes? 24 A. I am clarifying that that is 25 true of some of my opinions, and some of my</p>	<p style="text-align: right;">Page 33</p> <p>1 WEINBERG, Ph.D. 2 whether publishers in a given circumstance 3 are acting rationally; is it not? 4 MR. RENARD: Objection to form. 5 A. It is certainly possible to 6 design an experiment to study this. I 7 don't know whether that experiment could 8 decisively conclude the publishers are 9 certainly rational, but certainly you could 10 design an experiment to study that. 11 Q. So you could design an 12 experiment to study whether publishers were 13 rational, true? 14 A. Yes, one could design an 15 experiment to study whether publishers are 16 rational. 17 Q. And you could design an 18 experiment to study whether buyers are 19 rational, true? 20 A. Yes, one could design an 21 experiment to study whether buyers are 22 rational. 23 Q. And in your work in this report 24 you did not design or conduct any 25 experiment to test either, did you?</p>

<p style="text-align: right;">Page 34</p> <p>1 WEINBERG, Ph.D. 2 A. No, I did not design 3 experiments to test these. 4 Q. And so you have not, as you sit 5 here, tested or demonstrated the validity 6 of these assumptions, have you? 7 MR. RENARD: Objection to form. 8 A. No, that is incorrect. 9 Q. You did not design an 10 experiment. What is the basis, then, for 11 the assumption you make -- by the way, what 12 is an assumption? 13 A. So I would distinguish an 14 assumption from a conclusion, and 15 assumption is a starting point for an 16 argument that follows, and a conclusion is 17 what follows from the assumption. 18 Q. Assumption is a starting point 19 for an argument, is that what you said? 20 A. I believe that's what I said. 21 Q. And assumptions can be 22 inaccurate; is that right? 23 A. Yes, an assumption could be 24 accurate or inaccurate. 25 Q. You are familiar with the adage</p>	<p style="text-align: right;">Page 36</p> <p>1 WEINBERG, Ph.D. 2 demonstrated fact. I was primarily drawing 3 a distinction between assumption and 4 conclusion. A conclusion could follow from 5 a demonstrated fact as well. 6 Q. So an assumption can be 7 different from a fact known to be true, 8 right? 9 A. An assumption would be 10 different from a fact known to be true. 11 The role they play in a logical argument is 12 the same. 13 Q. And when you talk about the 14 role in a logical argument, I ran across 15 something when I noted your use of the word 16 "claim," Professor, a form of reasoning 17 called CER. Are you familiar with that? 18 MR. RENARD: I object to 19 everything up to the question, move to 20 strike. 21 A. I don't recall what the acronym 22 CER stands for. I don't know if I'm 23 familiar with it. 24 Q. Claim evidence reasoning? 25 A. I don't believe I have heard</p>
<p style="text-align: right;">Page 35</p> <p>1 WEINBERG, Ph.D. 2 when you assume you make an ass of you and 3 me? 4 A. Yes, I am familiar with that. 5 Q. And so you made these 6 assumptions and you did not design an 7 experiment to test their validity, true? 8 MR. RENARD: Objection to form. 9 A. I did not design any 10 experiments, and as I said, some claims did 11 make -- some claims did make assumptions 12 because some assumptions are necessary in 13 order to draw conclusions. 14 Q. You have to assume certain 15 facts in order to draw the conclusions you 16 have drawn, right? 17 MR. RENARD: Objection to form. 18 A. Yes, every conclusion requires 19 a starting point, which would be an 20 assumption. 21 Q. Well, it could be an assumption 22 or it could be a demonstrated fact, right? 23 MR. RENARD: Objection to form. 24 A. Sorry, I didn't mean to draw a 25 distinction between assumption and</p>	<p style="text-align: right;">Page 37</p> <p>1 WEINBERG, Ph.D. 2 that phrase before. 3 Q. Okay. But at least as you used 4 the term "claim," a claim is a statement 5 that is subject to dispute and 6 demonstration; is that fair? 7 A. Yes, I think every claim should 8 be subject to dispute. 9 Q. And you would agree further 10 that a claim is only valid if it is 11 demonstrated to be true on the evidence? 12 MR. RENARD: Objection to form. 13 A. I don't know exactly what valid 14 means, but, you know, a claim can be true 15 or false, and a false claim, it is hard for 16 me to imagine a definition of valid for 17 which a false claim would be valid. 18 Q. Okay. But a claim is 19 demonstrated to be true would you agree 20 only if it is supported by evidence? 21 MR. RENARD: Objection to form. 22 A. I would say if you take a broad 23 view of evidence to include mathematical 24 justification, I would say yes, every claim 25 in order to be deemed true should have a</p>

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<p>1 WEINBERG, Ph.D.</p> <p>2 justification.</p> <p>3 Q. Are you finished?</p> <p>4 A. Yes, sorry.</p> <p>5 Q. Every claim to be true should</p> <p>6 have a justification either in evidence or</p> <p>7 math; is that what you mean? I just want</p> <p>8 to be sure I had your complete answer.</p> <p>9 A. I was including within</p> <p>10 evidence, the reason I gave a nuanced</p> <p>11 answer is because some mathematical claims</p> <p>12 are claims about math and there is not an</p> <p>13 evidence element, there is only a logic</p> <p>14 element. There is not a physical evidence</p> <p>15 element, there is only a logic element.</p> <p>16 And so some claims can be proven true using</p> <p>17 only logic, and so I wanted to include</p> <p>18 those claims in the set of claims that</p> <p>19 could be proven true.</p> <p>20 Q. So would you agree with the</p> <p>21 statement, then, that math is not a matter</p> <p>22 of opinion, it is just a fact?</p> <p>23 A. No. There are elements of math</p> <p>24 that are just facts, but how math is</p> <p>25 applied to real-world situations is a</p>	<p>Page 38</p> <p>1 WEINBERG, Ph.D.</p> <p>2 of how the statement the sum of the parts</p> <p>3 is greater than the whole is not true as a</p> <p>4 statement of math, right?</p> <p>5 A. Yes. Again, just to be super</p> <p>6 clear, when you made that statement, you</p> <p>7 took parts to mean numbers and you took</p> <p>8 whole to mean the sum of those numbers. So</p> <p>9 I just want to emphasize that you needed a</p> <p>10 concrete definition to make it a</p> <p>11 mathematical statement. But yes, what you</p> <p>12 said is correct.</p> <p>13 Q. All right. So let's talk some</p> <p>14 more about your experience, sir.</p> <p>15 By the way, I didn't tell you,</p> <p>16 but anytime you need a break, you let me</p> <p>17 know. Okay?</p> <p>18 A. Sure.</p> <p>19 Q. If we look at your list of</p> <p>20 publications -- well, let's talk about your</p> <p>21 work experience first. You have only ever</p> <p>22 been an academic; is that right?</p> <p>23 MR. RENARD: Objection to form.</p> <p>24 A. No, that is not correct.</p> <p>25 Q. Okay. When have you worked in</p>
<p>1 WEINBERG, Ph.D.</p> <p>2 matter of opinion.</p> <p>3 Q. So let me ask you about another</p> <p>4 adage. The sum of the parts is greater</p> <p>5 than the whole, is that a statement that is</p> <p>6 mathematically true?</p> <p>7 MR. RENARD: Objection to form.</p> <p>8 A. In order for that statement to</p> <p>9 be mathematically true, it would require a</p> <p>10 precise definition of parts and whole. So</p> <p>11 as stated, I would not say that claim is</p> <p>12 mathematically true.</p> <p>13 Q. Okay. So, for example, if I</p> <p>14 say I have the number 4 and I add to it the</p> <p>15 number 2, the result of that is?</p> <p>16 MR. RENARD: Objection to form.</p> <p>17 A. If that's a question for me,</p> <p>18 the answer is 6.</p> <p>19 Q. And you can arrive at the</p> <p>20 result, 6, by adding 1 plus 2 plus 3, 4</p> <p>21 plus 2, 5 plus 1, but in each case those</p> <p>22 parts do not equate to more than 6, right?</p> <p>23 A. Yes, all of those additions are</p> <p>24 correct.</p> <p>25 Q. And so that would be an example</p>	<p>Page 39</p> <p>1 WEINBERG, Ph.D.</p> <p>2 the private sector?</p> <p>3 A. So for several summers, one</p> <p>4 example is the summer of 2009, another is</p> <p>5 the summer of 2010, another is the summer</p> <p>6 of 2011, and another is the summer of 2013.</p> <p>7 Q. You are looking at the last</p> <p>8 page of your resumé, sir?</p> <p>9 A. Yes, that is correct.</p> <p>10 Q. Okay. So you had summer</p> <p>11 internships while you were in college</p> <p>12 through 2010; is that right?</p> <p>13 A. I had summer internships while</p> <p>14 I was in college through 2009. In 2010 I</p> <p>15 had already graduated.</p> <p>16 Q. All right. And so you had</p> <p>17 another summer internship the summer of</p> <p>18 2010 before you went to MIT?</p> <p>19 A. Yes, that's correct.</p> <p>20 Q. And the Institute for Defense</p> <p>21 Analysis is a think tank; is that right?</p> <p>22 A. I do not believe they would</p> <p>23 consider themselves a think tank.</p> <p>24 Q. What would they consider</p> <p>25 themselves to be?</p>

<p style="text-align: right;">Page 42</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to form. 3 A. They are a contractor for the 4 Department of Defense. 5 Q. So you had some internships 6 with defense contractors from 2008 to 2011; 7 is that right? 8 A. 2009 to 2011. 9 Q. Okay. 10 A. Yes. 11 Q. And then from and after that, 12 all of your work has been in academic 13 research; is that right? 14 A. No, that is not correct. 15 Q. Okay. 16 A. I also mentioned the summer of 17 2013, so that is at Microsoft, and actually 18 recently in the summer of 2022 I was at 19 Andreessen Horowitz for the summer. 20 Q. Okay. So summer of 2013 you 21 were a research intern, a summer job, with 22 Microsoft? 23 A. Yes, that's correct. 24 Q. Microsoft is a competitor of 25 Google's; is that right?</p>	<p style="text-align: right;">Page 44</p> <p>1 WEINBERG, Ph.D. 2 A. No. I have definitely not 3 worked in ad publishing. The way the 4 question was asked was publishers. I 5 believe that many companies are publishers, 6 and I may not have known whether they were 7 publishers or not when I was working with 8 them. 9 Q. But we are here talking about 10 how ad publishers, among other things, sell 11 space on their websites for ads, right? 12 MR. RENARD: Objection to form. 13 A. That is one of the things we 14 are talking about, yes. 15 Q. And in that sense you have 16 never worked in ad publishing, you have 17 never had to prepare a marketing campaign, 18 sell ad space on a website, you have not 19 done any of that? 20 A. That is correct. 21 Q. Same question about ad buyers, 22 you have never worked as an ad buyer, have 23 you? 24 A. I have never worked on ad 25 buying. I'm, again, making just the same</p>
<p style="text-align: right;">Page 43</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to form. 3 A. I don't know whether they are a 4 competitor of Google's or not. 5 Q. And in the summer of 2022 you 6 worked at, what did you say, Andreessen 7 Horowitz? 8 A. Andreessen Horowitz, that's 9 correct. 10 Q. What are they? 11 A. Andreessen Horowitz is a 12 venture capital firm. 13 Q. They invest in tech companies? 14 A. I believe they invest in tech 15 companies, but I don't know their entire 16 portfolio. 17 Q. And in any of those internships 18 that you had for the summers, did you work 19 with ad publishers? 20 A. I don't know whether any of the 21 companies I worked for are also publishers. 22 Q. You are not here telling the 23 jury that you have worked in ad publishing, 24 are you? 25 MR. RENARD: Objection to form.</p>	<p style="text-align: right;">Page 45</p> <p>1 WEINBERG, Ph.D. 2 clarification, I don't know whether any 3 companies I have worked for also buy ad 4 space, but I have never worked on ad 5 buying, which I think was the intent of the 6 question. 7 Q. So you have never had to advise 8 or decide how to go about buying an ad on 9 an ad exchange? 10 A. That is correct. 11 Q. And you have never used any ad 12 buying tools; is that right? 13 A. That's correct. 14 Q. And you have written no 15 peer-reviewed or published scholarship 16 about ad publishers, have you? 17 A. I have written several 18 peer-reviewed papers on auction -- 19 Q. Show me which ones on your 20 resumé. 21 MR. RENARD: Were you finished 22 with your answer, Professor Weinberg? 23 If you weren't, please continue. 24 A. Yes, I was just going to 25 clarify that those papers are on auction</p>

<p>1 WEINBERG, Ph.D. 2 theory as it applies to ad auctions, and 3 the seller in those would be publishers. 4 Q. Which papers, please? 5 A. Sure. So Settling the 6 Competition Complexity of Additive Buyers 7 of -- 8 Q. Which date is that, sir? 9 A. That is 2024. I'm on page -- 10 the first page of my publications in my CV. 11 Sorry, the pages aren't labeled, but it is 12 the third from the front page. So it is 13 labeled as DRWX 24 on my CV. 14 Q. Okay. 15 A. And just to finish saying the 16 title, this was Settling the Competition 17 Complexity of Additive Buyers of 18 Independent Items. The next one is on the 19 following page labeled CWWZ 23, Selling to 20 Multiple No-Regret Buyers. Another example 21 is on the following page labeled PSW 22, On 22 Infinite Separations Between Simple and 23 Optimal Mechanisms. Right below that is 24 CCFPW 22, Optimal Item Pricing in 25 Combinatorial Auctions.</p>	<p>Page 46</p> <p>1 WEINBERG, Ph.D. 2 that is PSW 19, Smoothed Analysis of 3 Multi-Item Auctions with Correlated Values. 4 Next on the same page is BW 19, Optimal 5 (and Benchmark-Optimal) Competition 6 Complexity for Additive Buyers over 7 Independent Items. On the same page it is 8 labeled GW 18 and GW 21, The Sample 9 Complexity of up-to Epsilon 10 Multi-Dimensional Revenue Maximization. 11 On the same page is BMSW 18, 12 Selling to a No-Regret Buyer. On the same 13 page is SSW 18, The Menu Complexity of 14 "one-and-a-half-dimensional" Mechanism 15 Design. Below that is DW 17, The Optimal 16 Mechanism for Selling to a Budget 17 Constrained Buyer: The General Case. Below 18 that is EFFT 17b and EFFT 21, A Simple 19 and Approximately Optimal Mechanism for a 20 Buyer with Complements. Below that is 21 EFFT 17a, The Competition Complexity of 22 Auctions: A Bulow-Klemperer Result for 23 Multi-Dimensional Bidders. 24 On the next page is CDW 16 and 25 CDW 21, A Duality Based Unified Approach to</p>
<p>1 WEINBERG, Ph.D. 2 Below that is EFW 22, Credible, 3 Strategyproof, Optimal, and Bounded 4 Expected-Round Single-Item Auctions for All 5 Distributions. Below that is EW 21, On 6 Symmetries in Multi-Dimensional Mechanism 7 Design. Below that, sorry, on the next 8 page, is FW 20, Credible, Truthful and 9 Two-Round (Optimal) Auctions via 10 Cryptographic Commitments. Below that is 11 DGSSW 20, Optimal Mechanism Design for 12 Single-Minded Agents. Below that is CW 20, 13 On the (in)-approximability of Bayesian 14 Revenue Maximization for a Combinatorial 15 Buyer. 16 MR. RENARD: Professor, in 17 reading those article names, if you 18 will go slow enough that Todd, our 19 court reporter, gets it down, because 20 sometimes people speed up when they 21 read. 22 THE WITNESS: Sure. 23 A. On the next page is KMSSW 19, 24 Approximation Schemes for a Buyer with 25 Independent Items via Symmetries. Below</p>	<p>Page 47</p> <p>1 WEINBERG, Ph.D. 2 Bayesian Mechanism Design. On the same 3 page is RW 15 and RW 18, Simple Mechanisms 4 for a Subadditive Buyer and Applications to 5 Revenue Monotonicity. Below that is DDW 6 15, DDW 18, Revenue Maximization and 7 Ex-Post Budget Constraints. 8 On the next page is BILW 14, 9 BILW 20, A Simple and Approximately Optimal 10 Mechanism for an Additive Buyer. The same 11 page is CDW 13b, Understanding Incentives: 12 Mechanism Design Becomes Algorithm Design. 13 Below that, CDW 13a, Reducing Revenue to 14 Welfare Maximization: Approximation 15 Algorithms and Other Generalizations. 16 Below that, ADMW 13, Optimal and Efficient 17 Parametric Auctions. 18 On the next page, CDW 12b, 19 Optimal Multi-Dimensional Mechanism Design: 20 Reducing Revenue to Welfare Maximization. 21 Below that, DW 12, Symmetries and Optimal 22 Multi-Dimensional Mechanism Design. Below 23 that, An Algorithmic Characterization of 24 Multi-Dimensional Mechanisms. And then the 25 last one is the BCKW 10, BCKW 15, Pricing</p>

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<p style="text-align: right;">Page 50</p> <p>1 WEINBERG, Ph.D. 2 Randomized Allocations. 3 And just to wrap up, I will 4 repeat that these papers all concern 5 auction theory from the perspective of a 6 seller, and the theory in these papers 7 would apply to ad auctions, and the seller 8 in these papers would be the publisher. 9 MR. RENARD: Ms. Patrick, we 10 have been going -- 11 MS. PATRICK: Let me just 12 finish this topic. 13 MR. RENARD: Whenever you are 14 at a convenient breaking point. 15 Q. Professor, I want to go back 16 and ask you my question, because my 17 question was not whether you had written 18 about auction theory, my question was 19 whether you have peer-reviewed or published 20 scholarship related specifically to 21 consideration of the behavior of ad buyers? 22 MR. RENARD: Objection to form. 23 A. I think the question -- 24 Q. I'm sorry, I will just read 25 you -- let me strike that.</p>	<p style="text-align: right;">Page 52</p> <p>1 WEINBERG, Ph.D. 2 Q. I understand your assertion 3 they apply, sir. My question is different. 4 Do you understand my question? 5 A. I believe I understood your 6 question. 7 Q. And my question was which 8 specific papers use ad auctions as 9 motivating examples, and your answer is you 10 can't tell me any, right? 11 A. My answer is I don't recall 12 without seeing the text of each paper which 13 ones it is that explicitly state it as a 14 motivating example, that's correct. 15 Q. And do any of them consider ad 16 buyers specifically? 17 MR. RENARD: Objection to form. 18 A. So all of them apply to ad 19 buyers by the same reasoning that the 20 theory applies to ad auctions where the 21 buyers would be the ad buyers. Again, I 22 don't believe the papers use the phrase "ad 23 buyer" in them. 24 Q. So to be clear, none of the 25 papers that you just listed describes or</p>
<p style="text-align: right;">Page 51</p> <p>1 WEINBERG, Ph.D. 2 My question to you was you have 3 written no peer-reviewed or published 4 scholarship about ad publishers, have you? 5 Do any of these papers specifically mention 6 ad publishers, sir? 7 A. So all of the papers I listed 8 consider auctions from the perspective of a 9 revenue-maximizing seller, which would be 10 relevant to ad auctions where the publisher 11 is the seller. The papers do not use the 12 term "publisher" in them. 13 Q. So none of these papers 14 considers a specific example of an ad 15 publisher, true? 16 A. The papers use ad auctions as a 17 motivating example. They do not use the 18 term "publisher." 19 Q. And which specific papers use 20 ad auctions as motivating examples? 21 A. I do not recall exactly which 22 papers use ad auctions as a motivating 23 example. All of those papers could use ad 24 auctions as a motivating example because 25 they all apply to ad auctions.</p>	<p style="text-align: right;">Page 53</p> <p>1 WEINBERG, Ph.D. 2 discusses ad buyers specifically, true? 3 A. Many of them would use ad 4 auctions as a motivating example and may 5 discuss ad buyers. If it is helpful, I'm 6 comfortable saying that they do not make a 7 special point of discussing ad buyers as 8 different than other forms of buyers, if 9 that's what you are looking for. 10 Q. And can you confirm that in 11 each of the cases and papers that you just 12 cited, you are not the principal author of 13 any of them? 14 MR. RENARD: Objection to form. 15 A. In mathematical fields, you 16 will notice all of the authors are ordered 17 alphabetically. There may be only one or 18 two exceptions, and my last name starts 19 with a W, and I believe there was only one 20 example of a paper where my co-author had a 21 later last name. But the first versus last 22 is not a meaningful distinction in math. 23 Q. But can you at least answer for 24 my purposes, are you the principal author 25 of all of these papers?</p>

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<p>1 WEINBERG, Ph.D.</p> <p>2 A. Sure. For many of them I am</p> <p>3 the principal author. For all of them I am</p> <p>4 a heavily involved author. I will just</p> <p>5 give you some examples.</p> <p>6 For example, BILW 14, BILW 20,</p> <p>7 I would say I was the principal author.</p> <p>8 For CDW 13b, CDW 13a, ADMW 13, CDW 12b, I</p> <p>9 would say I was a co-principal author with</p> <p>10 the co-author Yang Cai or Pablo Azar on</p> <p>11 ADMW. On DW 12 I would say I was the</p> <p>12 principal author. On DW 15 I was the</p> <p>13 principal author. On DDW 15, DDW 18 I was</p> <p>14 the principal author. On RW 15, RW 18 I</p> <p>15 was a co-principal author with Aviad</p> <p>16 Rubinstein. I don't know if there are any</p> <p>17 examples where I would say I was not a</p> <p>18 co-principal author.</p> <p>19 Q. Okay.</p> <p>20 A. Maybe for DRWX 24 I would say</p> <p>21 that the two students, Emily and Eric, were</p> <p>22 the co-principal authors. And for CWWZ 23</p> <p>23 I would say the students, Linda Cai, Evan</p> <p>24 Wildenhain and Shirley Zhang were the</p> <p>25 co-principal authors. Maybe if it is</p>	<p>Page 54</p> <p>1 WEINBERG, Ph.D.</p> <p>2 your testimony on the break, sir?</p> <p>3 MR. RENARD: You can answer</p> <p>4 that yes or no.</p> <p>5 A. Yes.</p> <p>6 Q. And having had that</p> <p>7 conversation, is there anything that we</p> <p>8 discussed in the first hour that you feel</p> <p>9 like you need to correct?</p> <p>10 A. No.</p> <p>11 Q. All right. Let's move on. We</p> <p>12 were talking about your work in the private</p> <p>13 sector. Has any private company paid you</p> <p>14 to design an auction for them?</p> <p>15 A. No company has paid me to</p> <p>16 design an auction specifically for them.</p> <p>17 Q. And just to tie it out, what</p> <p>18 subjects of your testimony did you discuss</p> <p>19 with counsel during the break?</p> <p>20 MR. RENARD: I will object to</p> <p>21 that and instruct you not to answer.</p> <p>22 Q. You used an "ly" word, which is</p> <p>23 an adverb. You said "No company has paid</p> <p>24 me to design an auction specifically for</p> <p>25 them." Has any company paid you to design</p>
<p>1 WEINBERG, Ph.D.</p> <p>2 helpful I can summarize. I tend to be a</p> <p>3 co-principal author on papers I work on.</p> <p>4 Q. Okay, fair enough.</p> <p>5 MS. PATRICK: Your counsel has</p> <p>6 asked for a break, so why don't we take</p> <p>7 ten minutes and we will come right</p> <p>8 back.</p> <p>9 THE VIDEOGRAPHER: Off the</p> <p>10 record, 10:25 a.m.</p> <p>11 (Recess taken.)</p> <p>12 THE VIDEOGRAPHER: Back on the</p> <p>13 record, 10:38 a.m. eastern standard</p> <p>14 time.</p> <p>15 BY MS. PATRICK:</p> <p>16 Q. Did you have an opportunity to</p> <p>17 talk with counsel during your break, sir?</p> <p>18 A. Yes.</p> <p>19 Q. Did they suggest anything in</p> <p>20 your testimony that we did in the first</p> <p>21 hour that you needed to change or correct?</p> <p>22 MR. RENARD: I will object to</p> <p>23 that question and instruct you not to</p> <p>24 answer.</p> <p>25 Q. Did you discuss the subject of</p>	<p>Page 55</p> <p>1 WEINBERG, Ph.D.</p> <p>2 an auction for them?</p> <p>3 A. I added the qualifier because</p> <p>4 while I was Andreessen Horowitz I was paid,</p> <p>5 and while I was there I was designing</p> <p>6 auctions. So I tried to answer the spirit</p> <p>7 of your question, which is to say I did not</p> <p>8 write source code.</p> <p>9 Q. So fair to say you have not</p> <p>10 ever been paid to write source code for an</p> <p>11 auction?</p> <p>12 A. I have never been paid to write</p> <p>13 source code for an auction, correct.</p> <p>14 Q. And while you worked on the</p> <p>15 design of auctions while working at the</p> <p>16 venture capital firm over the summer, did</p> <p>17 any of those auctions pertain to potential</p> <p>18 auctions of display ads?</p> <p>19 A. In the same way that my</p> <p>20 research publications, design auctions,</p> <p>21 that are applicable to display ads, the</p> <p>22 work I did there could be applied to</p> <p>23 display ads. I think for the spirit of</p> <p>24 your question, I did not design auctions at</p> <p>25 the level of detail that were then</p>

<p>1 WEINBERG, Ph.D.</p> <p>2 launched.</p> <p>3 Q. All right. Well, I want to be 4 quite specific. We are here in this case 5 about Google's Ad Exchange, right, you 6 understand that?</p> <p>7 MR. RENARD: Objection to form.</p> <p>8 Q. In part at least.</p> <p>9 A. In part we are here because of 10 Google's Ad Exchange, yes.</p> <p>11 Q. And auctions of various types 12 that Google conducted for ads?</p> <p>13 A. That is correct, another one of 14 the reasons we are here is because of 15 auctions of various types that Google 16 conducted for ads.</p> <p>17 Q. And in the spirit of that 18 question, none of the work you did at 19 Andreessen Horowitz or anywhere else was 20 specifically oriented to designing auctions 21 for the purchase or sale of display ads of 22 any kind, true?</p> <p>23 A. Yes. Maybe I can phrase it as 24 the auctions I designed were not more 25 applicable to ad auctions than other</p>	<p>Page 58</p> <p>1 WEINBERG, Ph.D.</p> <p>2 Q. You are here to offer opinions 3 as an expert, but you understand the Court 4 is going to decide whether you are 5 qualified to provide them or not, right?</p> <p>6 A. Yes, I do understand that. I 7 just didn't know the appropriate language 8 for the process.</p> <p>9 Q. All right. So now that I have 10 explained that to you, you have never been 11 qualified or permitted to testify in court 12 as an expert on any topic of any kind, 13 true?</p> <p>14 A. I have never been permitted to 15 testify by any court on any topic, that is 16 true.</p> <p>17 (Weinberg Exhibit 4 marked for 18 identification.)</p> <p>19 Q. Let's talk a little bit more 20 about your analysis. Would you look, 21 please, could you identify Exhibit 4 as 22 your errata sheet?</p> <p>23 A. Yes, Exhibit 4, yes, Exhibit 4 24 is my errata sheet.</p> <p>25 Q. Okay. And we will talk about</p>
<p>1 WEINBERG, Ph.D.</p> <p>2 auction domains.</p> <p>3 Q. And you weren't specifically 4 asked to work for client X to design a 5 display ad auction, true?</p> <p>6 A. Yes, that is true.</p> <p>7 Q. Do you hold any patents for 8 auction design?</p> <p>9 A. No.</p> <p>10 Q. Do you hold any patents at all?</p> <p>11 A. No.</p> <p>12 Q. Have you ever testified in 13 court before, sir?</p> <p>14 A. No.</p> <p>15 Q. And so fair to say, then, that 16 you have never been received as an expert 17 by any court in the field of economics?</p> <p>18 A. I have not been received prior 19 to this case as an expert in economics, 20 that's correct.</p> <p>21 Q. Well, you haven't been received 22 by the Court yet, right, you understand 23 that?</p> <p>24 A. Sorry, it is my first time, so 25 I don't know the right language.</p>	<p>Page 59</p> <p>1 WEINBERG, Ph.D.</p> <p>2 that a little bit later. But I did want to 3 ask you about the materials you reviewed.</p> <p>4 Could you pull out Exhibit 1 -- 5 well, actually, let's look at Exhibit 2 6 because it is more current, which would be 7 your rebuttal report, and could you please 8 look at Exhibit B to that report, or 9 Appendix B. Are you there?</p> <p>10 A. Yes, sorry.</p> <p>11 Q. All right. So Appendix B at 12 the top has a heading that says Materials 13 Relied Upon and Materials Considered. Do 14 you see that?</p> <p>15 A. Yes.</p> <p>16 Q. And so you first list materials 17 relied upon, and then in the next section 18 starting at page 2 you list materials 19 considered. Do you see that?</p> <p>20 A. Yes.</p> <p>21 Q. What does the word "considered" 22 mean to you, sir?</p> <p>23 A. As the word "considered" is 24 used here, it means that I had access to 25 all of this information and that the</p>

16 (Pages 58 - 61)

1 WEINBERG, Ph.D. 2 opinions presented have considered all of 3 the relevant information contained in them. 4 Q. So I brought a dictionary with 5 me, and you don't have to take my word for 6 it, I will show it to you if you want, you 7 cited the Merriam-Webster Dictionary in 8 some of your footnotes. Do you remember 9 that? 10 A. Yes, that is correct. 11 Q. All right. And do you know how 12 Merriam-Webster defines "considered"? 13 A. No, I do not. 14 Q. I just want to see if you agree 15 with it or not. If you will look at 16 page -- this is the Merriam-Webster 17 Dictionary. Look at page 265. If I have 18 done it right, you will find it 19 highlighted. If I haven't, you won't. 20 "Considered," got it? 21 A. Yes, I have read the 22 definition. 23 Q. All right. And the definition 24 from Merriam-Webster of "considered" is "to 25 observe or think about carefully," right?	Page 62	1 WEINBERG, Ph.D. 2 Let's start again. Directing 3 your attention to page 2 under Materials 4 Considered, you have said depositions and 5 transcripts and exhibits. Do you see that? 6 A. Yes. 7 Q. And you have listed a total of 8 84 depositions in the State of Texas 9 against Google. Do you see that? 10 A. Yes. 11 Q. And you have listed another 54, 12 if I have done my math right in my head, 13 depositions in the United States against 14 Google case. Do you see that? 15 A. Yes. 16 Q. Did you read each of those 17 depositions, sir? 18 A. As stated in the report, I 19 considered all of those depositions. 20 Q. That was not my question. Did 21 you read them? 22 A. I read -- I read the ones with 23 information that was relevant. 24 Q. Who told you which depositions 25 to read that had relevant information?	Page 64
1 WEINBERG, Ph.D. 2 A. That is one of the definitions 3 that you have highlighted. 4 Q. Is that a definition that you 5 accept? 6 MR. RENARD: Objection to form. 7 A. The definition that I think is 8 best suited for how I used it here would 9 actually be B, which is "to take into 10 account." 11 Q. Now, in your list of materials 12 considered, when I asked you what that 13 meant originally you said you had access to 14 this information and that the opinions 15 presented have considered all of the 16 relevant information contained in them. 17 Now, take into account, are you following 18 with me so far? 19 A. Yes. 20 Q. So in your list of materials 21 considered I counted 138 depositions that 22 you listed in United States against Google, 23 I'm sorry, a total of 138 depositions; is 24 that right? I think you need to look at 25 page 2 of your materials considered, sir.	Page 63	1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to the 3 form of the question. 4 A. I decided which ones to read. 5 In some cases that was because I recognized 6 the names from other documents that I had 7 seen, and in other cases it was because I 8 just read a lot of depositions. 9 Q. Okay. So you read some 10 depositions; is that right? 11 A. Yes. 12 Q. How did you consider the 13 depositions you did not read? 14 A. So I'm aware that many of 15 the -- there are many topics in the case 16 and my assignment concerns auction theory, 17 and so for the depositions that did not 18 contain auction theory, I considered them 19 without reading them front to back. 20 Q. Without reading them at all, 21 right? 22 A. Sure, that seems fair, without 23 reading them at all. 24 Q. So how many depositions did you 25 actually read, sir, and which ones?	Page 65

1 A. I don't remember the exact
2 number off the top of my head. I would
3 ballpark -- I would ballpark maybe 15 to
4 25.

5 Q. Can you tell me who, which
6 witnesses?

7 A. I can tell you some of them
8 that I remember most clearly. [REDACTED]
9 Nirmal Jayaram, both volumes, [REDACTED]
10 [REDACTED] Nitish Korula, all four volumes,
11 [REDACTED], deposition and exhibits of
12 [REDACTED]
13 [REDACTED]
14 There are -- there are definitely others,
15 but I don't recall exactly which of these.

16 Q. So of the, if I count
17 correctly, you said you estimated 15 to 25
18 but you only identified seven; is that
19 right?

20 A. Assuming you counted correctly,
21 that sounds right.

22 Q. Okay. And of those, the only
23 one that is a potential ad buyer is [REDACTED]
24 is that right?

25 A. I'm going off memory here, but

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1 WEINBERG, Ph.D.
2 report, Exhibit 1?
3 MR. RENARD: Objection to the
4 form of the question.
5 A. The assumption in the question
6 is not correct. One of the reasons I read
7 depositions was in response to Milgrom,
8 Wiggins and Baye, another reason is because
9 I chose to read them, and some of this I
10 did before the opening report.
11 Q. Which depositions did you read
12 before the opening report, sir?
13 A. That I do not recall. To
14 clarify, what I mean is I don't recall from
15 the depositions which was before, which was
16 after.
17 Q. And other than [REDACTED]
18 [REDACTED] do you have a memory of reading a
19 deposition by a single ad buyer?
20 MR. RENARD: Objection to the
21 form of the question.
22 A. [REDACTED] and I don't remember
23 why I remember this, but I think I even
24 remember that the name was [REDACTED].
25 Q. He is from [REDACTED]

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1 WEINBERG, Ph.D.
2 I believe the reason I read [REDACTED]
3 [REDACTED] is because it was cited in the
4 Wiggins report as being part of an ad
5 buyer.
6 Maybe let me say what I'm
7 trying to convey is that several of the
8 depositions I read are because they were
9 cited in the Milgrom or Wiggins report as
10 being of ad buyers. I think that's why I
11 remember the name [REDACTED].
12 Q. Okay. So first you think
13 [REDACTED] is an ad buyer?
14 MR. RENARD: Objection to form.
15 A. What I'm saying is I recognize
16 the name [REDACTED]. I believe the
17 reason I recognize that name is because her
18 deposition was cited in either the Milgrom,
19 Wiggins or Baye reports as making a claim
20 from the ad buyer's perspective.
21 Q. All right. Now, if you read
22 depositions only in response to the
23 Milgrom, Wiggins or Baye reports, is it
24 fair to say that you did not read any
25 depositions before you prepared your first

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1 WEINBERG, Ph.D.

2 A. Again, going from memory --
3 actually, I probably even have a quote from
4 him in my report. Yes, in footnote 87 I
5 write "Expert Report of S. Wiggins,
6 paragraph 50. [REDACTED]

[REDACTED] And then I say

16 more.

17 Q. Okay. So back to my question.
18 Other than [REDACTED] and [REDACTED]
19 of [REDACTED] those are the only two people
20 whose depositions you recall being ad
21 buyers?

22 MR. RENARD: Objection to form.

23 Q. That you read.

24 A. Those are the only two I can
25 definitively state are certainly ad buyers

1 WEINBERG, Ph.D. 2 that I read off the top of my head. I 3 don't recall if there are other -- other ad 4 buyers who I read. 5 Q. If [REDACTED] is a former 6 Google employee, then there would only be 7 one, right? 8 A. If I misremembered and 9 [REDACTED] was not speaking from the 10 perspective of ad buyers, then Nike is the 11 only example I gave, that's correct. 12 Q. My question, sir, to be 13 precise, was whether you had read the 14 depositions of any ad buyers, actual 15 buyers. 16 MR. RENARD: Objection to the 17 form of the question. 18 Q. And what I hear you saying is 19 the only ad buyer deposition you read was 20 of Nike; is that true? 21 A. That is not true. What I'm 22 saying is that [REDACTED] is the only one that I 23 can confidently state is an ad buyer among 24 those that I read. 25 Q. Do you think you read other ad	Page 70	1 WEINBERG, Ph.D. 2 advisement. 3 Q. All right. And of the 4 depositions on your list there, sir, how 5 many were of publishers? 6 A. I don't recall. 7 Q. Do you recall reading any 8 depositions of publishers? 9 A. I don't recall. 10 Q. Don't recall means -- I don't 11 recall has two meanings in my mind, so let 12 me press you. I don't recall means I don't 13 recall whether I did or I didn't, or no, I 14 don't remember doing that. What are you 15 saying? 16 MR. RENARD: I object to the 17 form of the question. 18 A. I'm saying the former, I don't 19 recall whether I did or did not read 20 depositions of publishers. 21 Q. So as you sit here today, you 22 cannot tell me that you read a deposition 23 of any publisher, true? 24 MR. RENARD: Objection to the 25 form.	Page 72
1 WEINBERG, Ph.D. 2 buyer depositions, sir, or are you just 3 guessing? 4 MR. RENARD: Objection to the 5 form. 6 A. I think I read other 7 depositions of other ad buyers. 8 Q. All right. So what I'm going 9 to do is I'm going to leave a blank in your 10 deposition here and I would like you to 11 list in your errata sheet the specific 12 depositions of ad buyers that you read 13 before you prepared either your opening 14 report or your rebuttal report. Okay? 15 MR. RENARD: Before you answer 16 that question, we will take that under 17 advisement, but we are making no 18 commitments right now to fill in blanks 19 in a deposition. 20 Q. Do you understand what I'm 21 going to do? You can decide whether you 22 are going to be complete in your answer or 23 not. Okay? 24 MR. RENARD: I object to the 25 argument there. We will take it under	Page 71	1 WEINBERG, Ph.D. 2 A. As I sit here today, I can say, 3 for example, I'm confident I read the 4 deposition of Disney. I believe that part 5 of their deposition was from the 6 perspective of a publisher. But I don't 7 recall whether it was from the publisher 8 perspective or exchange perspective. And 9 as I'm trying to remember from others on 10 this list, yeah, I cannot confidently state 11 I certainly read a deposition of a 12 publisher, but I believe that I did. 13 Q. Okay. And the one that is 14 possible is Disney; is that right? 15 A. To clarify, one that I 16 certainly read and is possibly from a 17 publisher perspective is Disney. 18 Q. Right. And so what you mean by 19 that is you know you read the Disney 20 deposition, but Disney also runs an ad 21 exchange, right? Is that what you mean? 22 A. What I mean by that is I 23 remember why I was interested in the Disney 24 deposition, and I do not recall whether 25 that was from the publisher or exchange	Page 73

<p>1 WEINBERG, Ph.D. 2 perspective. I am not stating that Disney 3 ran an exchange. 4 Q. How would Disney be from the 5 exchange perspective in your mind? 6 MR. RENARD: Objection to form. 7 A. So in paragraph 449(a) of my 8 rebuttal report, I will read the beginning 9 part of that paragraph. It says [REDACTED] [REDACTED] This similarity is 20 superficial (which would not be surprising, 21 as it would be quite challenging for one 22 program to be similar to both EDA and RPO) 23 and satisfies neither of the two elements." 24 So what I remember is reading 25 the Disney deposition carefully to</p>	<p>Page 74</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to form. 3 A. I am not confident of that, no. 4 Q. But you can't tell me today as 5 you sit here that you read any publisher 6 deposition before you prepared Exhibit 1, 7 right? 8 A. I cannot tell you a specific 9 deposition that I am confident is a 10 publisher and that I am confident I read 11 before producing my opening report. 12 Q. And in your opening report, if 13 we look at it, it has the same list of 14 materials considered, doesn't it, when it 15 comes to depositions? 16 A. From a quick look it appears to 17 be the same list. It has the same number 18 and it has the same number in each category 19 and it passes a quick spot check. 20 Q. All right. So at least as it 21 pertains to your opening report, when you 22 said you considered, among others, the 23 deposition of Disney, you had not in fact 24 read the deposition of Disney before your 25 opening report, true?</p> <p>Page 75</p> <p>1 WEINBERG, Ph.D. 2 understand [REDACTED] [REDACTED]</p> <p>16 Q. All right. And so am I hearing 17 you correctly that you did not read the 18 Disney deposition until Dr. Milgrom cited 19 it? 20 A. Yes, that is correct. 21 Q. Okay. So in preparing your 22 initial report, then, we can be relatively 23 confident that you did not read any 24 publisher deposition before you prepared 25 your first report, Exhibit 1?</p>	<p>Page 76</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to form. 3 A. I am not confident of that, no. 4 Q. But you can't tell me today as 5 you sit here that you read any publisher 6 deposition before you prepared Exhibit 1, 7 right? 8 A. I cannot tell you a specific 9 deposition that I am confident is a 10 publisher and that I am confident I read 11 before producing my opening report. 12 Q. And in your opening report, if 13 we look at it, it has the same list of 14 materials considered, doesn't it, when it 15 comes to depositions? 16 A. From a quick look it appears to 17 be the same list. It has the same number 18 and it has the same number in each category 19 and it passes a quick spot check. 20 Q. All right. So at least as it 21 pertains to your opening report, when you 22 said you considered, among others, the 23 deposition of Disney, you had not in fact 24 read the deposition of Disney before your 25 opening report, true?</p> <p>Page 77</p> <p>1 WEINBERG, Ph.D. 2 A. Yes, and I can clarify the 3 reason for that, is that the content of the 4 Disney report was used to support an 5 opinion of the rebuttal report. 6 Q. My question, sir, was your 7 opening report says you had considered the 8 deposition of Disney but you had not in 9 fact read it at that time, true? 10 A. Yes, that is correct, and I'm, 11 again, clarifying that it was considered 12 still. 13 Q. You knew it existed? 14 A. Yes, I did know it existed. 15 Q. But in terms of observing and 16 thinking about it carefully, the dictionary 17 definition we used earlier, or taking it 18 into account, your preferred definition, 19 you had not actually read the Disney 20 deposition even though you listed it as 21 considered before you prepared your first 22 report, true? 23 MR. RENARD: Objection to form. 24 A. So I will again note that for 25 the dictionary definition that I said was</p>
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<p>1 WEINBERG, Ph.D. 2 most relevant in this context was taken 3 into account, that the report was taken 4 into account for the report.</p> <p>5 Q. The fact that there was a 6 deposition of Disney was taken into 7 account, but you did not review or consider 8 its contents, true?</p> <p>9 A. I did not review the contents. 10 The opinions in my report are taken in 11 consideration of those contents.</p> <p>12 Q. Mr. Weinberg, I'm having some 13 trouble here. How do you consider 14 something that you haven't read? Is this 15 like Carnac the Magnificent, that you hold 16 it up and you hold it up to your head and 17 say I have considered it?</p> <p>18 MR. RENARD: I object to the 19 form of the question.</p> <p>20 Q. You understand my point?</p> <p>21 MR. RENARD: I object to the 22 statement to the witness. Do you have 23 a question?</p> <p>24 MS. PATRICK: That is my 25 question.</p>	<p>Page 78</p> <p>1 WEINBERG, Ph.D. 2 fact that Disney had been deposed but not 3 what Disney's witness said because you had 4 not read it, true?</p> <p>5 A. What I'm saying is that the 6 opinions that are in the opening report 7 have taken into account the contents, and 8 the opinions -- the opinions are not 9 impacted -- the opinions do not need to be 10 impacted or changed in any way due to 11 contents in the material considered list.</p> <p>12 Q. How do you take into account 13 the content of a deposition if you don't 14 read it, sir?</p> <p>15 A. So when forming an opinion, 16 there is some information I need and there 17 is some information that may not be 18 relevant to the opinions I'm forming, and 19 so it is possible to have an opinion that 20 has considered information that would not 21 influence that opinion.</p> <p>22 Q. You just said your opinions are 23 not impacted and do not need to be impacted 24 or changed in any way due to contents in 25 the material considered list, right?</p>
<p>1 WEINBERG, Ph.D. 2 MR. RENARD: With all the 3 preface?</p> <p>4 MS. PATRICK: Yes.</p> <p>5 MR. RENARD: I object to all 6 that, move to strike it.</p> <p>7 A. The opinions in the report are 8 in consideration of the information that is 9 in what I have cited in the materials 10 considered list. I would stand by that 11 statement.</p> <p>12 Q. All right. But the information 13 in the list is only the fact that Disney 14 gave a deposition, right?</p> <p>15 A. The information you would get 16 from reading the materials considered list 17 is only the fact that Disney gave a 18 deposition.</p> <p>19 Q. And in preparing your report, 20 you did not in any way in your opening 21 report take into account the testimony of 22 the Disney witness because you had not read 23 that testimony, true?</p> <p>24 A. No, I wouldn't say that.</p> <p>25 Q. So you took into account the</p>	<p>Page 79</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to the 3 form of the question.</p> <p>4 A. Could you repeat the quote one 5 more time?</p> <p>6 Q. Yeah. I will read it exactly. 7 I can show it to you if you would like. Do 8 you want to look at it?</p> <p>9 A. Maybe that's safer.</p> <p>10 Q. Okay.</p> <p>11 A. Would you like me to just 12 reread the answer?</p> <p>13 Q. You can.</p> <p>14 A. Or could you remind me what the 15 question is?</p> <p>16 Q. My question was, is it the 17 case, then, that your opinions are not 18 changed or affected by the content of any 19 testimony?</p> <p>20 MR. RENARD: Objection to the 21 form.</p> <p>22 A. The opinions in the opening 23 report are not changed by the content of 24 the Disney testimony, that's correct.</p> <p>25 Q. And the opinions in the opening</p>

<p style="text-align: right;">Page 82</p> <p>1 WEINBERG, Ph.D. 2 report would not change or be changed by 3 the content of the testimony of any ad 4 publisher, would they? 5 MR. RENARD: Objection to the 6 form. 7 A. I mean, the opinions would not 8 change because I was thorough in forming 9 them and cited all of the evidence 10 necessary to confirm that everything is 11 correct. Short of someone saying that the 12 stuff I looked at was fraudulent and false 13 I don't know how the opinions would change. 14 Q. Well, let's be quite precise, 15 sir. You formed your opinions, you say, in 16 consideration of the materials on the list, 17 but we have established that your opening 18 report would not be changed by the content 19 of any ad buyer's testimony, true? 20 MR. RENARD: Objection to the 21 form of the question. 22 A. Sorry, could you just repeat 23 one more time? 24 Q. Does it matter to your report 25 at all, Professor Weinberg, what any ad</p>	<p style="text-align: right;">Page 84</p> <p>1 WEINBERG, Ph.D. 2 way, true? 3 MR. RENARD: Same objection. 4 A. I would slightly rephrase it 5 as -- I would rephrase it as the testimony 6 of an ad buyer could have been additional 7 evidence to support the opinions that I 8 already have evidence for, and the actual 9 question that at the same time testimony of 10 ad buyers did not impact my opinions 11 because I already had sufficient evidence 12 without ad buyer testimony. 13 Q. So the testimony of ad buyers 14 could have supported your opinions, but 15 that's only if the ad buyers agreed with 16 you, right? 17 MR. RENARD: Objection to the 18 form of the question. 19 A. I don't know that an ad buyer 20 would agree or disagree with a conclusion 21 of auction theory. What I meant was for 22 the evidence from which I draw conclusions, 23 that evidence could be -- that that 24 evidence was supported from the sources 25 that I directly cited and some of that</p>
<p style="text-align: right;">Page 83</p> <p>1 WEINBERG, Ph.D. 2 buyer testified to? 3 A. Ad buyer testimony could have 4 strengthened my opinions maybe. Ad buyer 5 testimony could have been one source of 6 information if you were unable to get that 7 information from another source. Those are 8 two ways I can think of. But I was able to 9 get the information I needed from the 10 sources I directly cited and relied upon. 11 Q. So it could have been the case 12 that an ad buyer's testimony might affect 13 your report, but as you sit here you cannot 14 tell the jury that the testimony of any ad 15 buyer actually impacted your report in any 16 way, true? 17 MR. RENARD: Objection to form. 18 A. Could you rephrase -- sorry, I 19 don't need you to rephrase, could you just 20 repeat the question? 21 Q. It could have been the case 22 that an ad buyer's testimony might affect 23 your report, but as you sit here you cannot 24 tell the jury that the testimony of any ad 25 buyer actually impacted your report in any</p>	<p style="text-align: right;">Page 85</p> <p>1 WEINBERG, Ph.D. 2 evidence could have been additionally drawn 3 from ad buyer testimony. 4 Q. Okay. But my point is you 5 cannot tell the jury as you sit here today 6 that the testimony of any ad buyer actually 7 impacted your report in any way? 8 A. With the same caveat, the 9 testimony of ad buyers could have been 10 additional evidence to opinions that are 11 already supported by existing evidence, but 12 because I got that evidence from other 13 sources the testimony of ad buyers did not 14 directly influence my opinions. 15 Q. So to state it directly, the 16 testimony of ad buyers did not directly 17 influence any of the opinions in your 18 report, true? 19 A. I am repeating the caveats 20 because I think the caveat is important, 21 that there are instances where I had 22 sufficient evidence for my opinions and 23 testimony from ad buyers could have been 24 additional sources of evidence. Because I 25 already had sufficient evidence from other</p>

<p style="text-align: right;">Page 86</p> <p>1 WEINBERG, Ph.D. 2 sources, the testimony of ad buyers did not 3 directly impact my conclusions in the 4 opening report.</p> <p>5 Q. Sir, I understand you believe 6 you had sufficient evidence. The jury is 7 going to have to decide whether they agree 8 with you. Do you understand that?</p> <p>9 MR. RENARD: Objection to the 10 form of the question.</p> <p>11 A. Yes, I understand that the jury 12 will ultimately decide whether they trust 13 my opinions or not.</p> <p>14 Q. And if the jury believes it is 15 important to consider what ad buyers 16 actually said, you can't tell them that in 17 preparing your report you did that?</p> <p>18 MR. RENARD: Objection to the 19 form of the question.</p> <p>20 A. If the jury were to ask me 21 that, I would repeat the same caveats, 22 which is that there are instances where ad 23 buyer testimony could have provided 24 additional evidence to support conclusions 25 I drew in my opening report, and I would</p>	<p style="text-align: right;">Page 88</p> <p>1 WEINBERG, Ph.D. 2 report, but just to confirm, you also never 3 interviewed any individual ad buyer, did 4 you?</p> <p>5 A. No, I did not.</p> <p>6 Q. And you never interviewed any 7 individual ad seller, did you?</p> <p>8 A. No, I did not.</p> <p>9 Q. And you have never spoken to 10 any Google employee, have you?</p> <p>11 A. I have not spoken directly to a 12 Google employee in any matter related to 13 this case.</p> <p>14 Q. All right. And how about 15 employees of other ad exchanges, have you 16 talked to any of them or interviewed any of 17 them?</p> <p>18 A. Again, I have not talked to any 19 of them directly related to this case.</p> <p>20 Q. And you don't list any 21 interviews of witnesses as materials you 22 considered or relied on, so it's fair to 23 say I'm not going to hear you testify about 24 that at the trial, right?</p> <p>25 MR. RENARD: Objection to the</p>
<p style="text-align: right;">Page 87</p> <p>1 WEINBERG, Ph.D. 2 ask them -- or I would explain to them why 3 the evidence that I already had I 4 considered to be sufficient, and then I 5 would honestly answer the question that 6 because of that the direct testimony of ad 7 buyers did not directly influence opinions 8 in my opening report.</p> <p>9 Q. And in fact as you sit here 10 today you can't remember whether you read 11 any testimony of any ad buyers before you 12 did your opening report, true?</p> <p>13 MR. RENARD: Objection to form.</p> <p>14 A. Yes, I do not recall 15 definitively whether I read testimony of ad 16 buyers before submitting my opening report.</p> <p>17 Q. And true or false, you don't 18 remember definitively whether you read the 19 deposition of any publisher before you 20 prepared your opening report?</p> <p>21 A. That is also correct, I do not 22 recall definitively whether I read the 23 deposition of a publisher before preparing 24 the opening report.</p> <p>25 Q. It is not listed in your</p>	<p style="text-align: right;">Page 89</p> <p>1 WEINBERG, Ph.D. 2 form of the question.</p> <p>3 Q. In your materials considered, 4 sir, I don't see that you conducted any 5 personal interviews with any witness; is 6 that true?</p> <p>7 A. Yes, that is correct, I did not 8 conduct any personal interviews with any 9 witnesses.</p> <p>10 Q. And so you don't expect to tell 11 me at the trial about somebody you talked 12 to that you didn't mention in your report, 13 true?</p> <p>14 MR. RENARD: Objection to the 15 form of the question.</p> <p>16 A. Yes, I do not expect to testify 17 at trial by telling you about an interview 18 that is not listed in either of these 19 reports.</p> <p>20 Q. In the materials considered, 21 you understand here that the states are 22 suing Google under various deceptive trade 23 practices statutes, do you know that?</p> <p>24 A. Yes.</p> <p>25 Q. And you also know they are</p>

23 (Pages 86 - 89)

<p>1 WEINBERG, Ph.D. 2 suing Google under various antitrust 3 statutes? 4 A. Yes. 5 Q. Did you read or inform yourself 6 of the requirements of those statutes in 7 connection with preparing your report here? 8 A. Not in detail, since I'm not 9 providing a legal opinion. 10 Q. My question was not whether you 11 did that in detail. My question was did 12 you inform yourself of the requirements of 13 those statutes or read them in connection 14 with preparing your report? 15 A. I did not read the statutes as 16 standalone -- I did not do standalone 17 reading of the statutes, no. 18 Q. So you are opining here without 19 knowing as to any particular statute what 20 actually constitutes a violation of the 21 statute, true? 22 MR. RENARD: Objection to the 23 form of the question. 24 A. So just to be clear, none of my 25 opinions are alleging a violation of any</p>	Page 90	Page 92
<p>1 WEINBERG, Ph.D. 2 statute. It is my understanding that other 3 experts may be using claims in my report as 4 the basis to allege violations. 5 Q. Which other experts? 6 MR. RENARD: Objection to the 7 form. 8 A. So I am aware that Mr. Andrien 9 uses claims in my report as a basis to 10 allege violations of the DTPA. 11 Q. Have you spoken with 12 Mr. Andrien? 13 A. Yes. 14 Q. How many times? 15 A. Once. 16 Q. When? 17 A. I don't recall the exact date. 18 Maybe a month ago. 19 Q. What did he tell you? 20 MR. RENARD: I'm going to 21 object to that under the Court's order 22 regarding experts, and I will instruct 23 you not to answer the question. 24 Q. All right. So you are not 25 yourself alleging a violation of any</p>	Page 91	Page 93

<p>1 WEINBERG, Ph.D.</p> <p>2 Q. And, sir, I'm not asking you</p> <p>3 what Mr. Andrien is doing. He is going to</p> <p>4 account for himself when he is deposed. I'm</p> <p>5 asking you specifically have you determined</p> <p>6 how many violations of a deceptive trade</p> <p>7 practices act occurred in any particular</p> <p>8 state?</p> <p>9 MR. RENARD: I object to the</p> <p>10 form of the question.</p> <p>11 A. No, my report does not attempt</p> <p>12 to count a number of violations.</p> <p>13 Q. And the number of violations</p> <p>14 that might have occurred, therefore, is not</p> <p>15 in your view a relevant issue for you?</p> <p>16 MR. RENARD: Objection to the</p> <p>17 form of the question.</p> <p>18 A. Maybe if it is helpful, I can</p> <p>19 repeat my assignment and then answer your</p> <p>20 question.</p> <p>21 So this is stated on page 7 of</p> <p>22 my opening report, in paragraph 1, I will</p> <p>23 just read the whole thing. "I have been</p> <p>24 engaged by the counsel for the Office of</p> <p>25 Texas Attorney General, on behalf of all</p>	<p>Page 94</p> <p>1 WEINBERG, Ph.D.</p> <p>2 number of violations that might have</p> <p>3 occurred, therefore, is not in your view a</p> <p>4 relevant issue for you and your report, I</p> <p>5 take it the answer to my question is not</p> <p>6 relevant?</p> <p>7 A. Sorry, I had forgotten the</p> <p>8 question. I will just say yes, and maybe I</p> <p>9 will quickly summarize that it is because</p> <p>10 my assignment was to understand how the</p> <p>11 conducts changed the auction procedure from</p> <p>12 an auction theory perspective and how the</p> <p>13 resulting changes impact outcomes.</p> <p>14 Q. So we're not going to hear you</p> <p>15 at trial testify to a number of violations</p> <p>16 or that this or that action of Google</p> <p>17 violated the statutes, are we?</p> <p>18 MR. RENARD: Objection to the</p> <p>19 form of the question.</p> <p>20 A. I have no intention of</p> <p>21 testifying at trial about a number of</p> <p>22 violations that have occurred, nor making</p> <p>23 claims that involve legal reasoning about</p> <p>24 the statutes, that's correct.</p> <p>25 Q. Or about whether any particular</p>
<p>1 WEINBERG, Ph.D.</p> <p>2 Plaintiff States in the case, to analyze</p> <p>3 several changes made to the auctions for</p> <p>4 online displayed ads under the conducts</p> <p>5 undertaken by Google."</p> <p>6 In particular, I have been</p> <p>7 asked to opine on "How the conducts</p> <p>8 undertaken by Google (including Dynamic</p> <p>9 Allocation, Dynamic Revenue Sharing,</p> <p>10 Project Bernanke, Unified Pricing Rules and</p> <p>11 Reserve Price Optimization) change the</p> <p>12 auction procedure from an auction theory</p> <p>13 perspective, and how the resulting changes</p> <p>14 to auction procedures impact outcomes (such</p> <p>15 as revenue, fill rate, price, payoff, win</p> <p>16 rate) for various actors in the auctions</p> <p>17 for online display ads (including</p> <p>18 publishers, advertisers, exchanges, ad</p> <p>19 buying tools.)"</p> <p>20 And so as a result it is not</p> <p>21 relevant to that assignment to directly</p> <p>22 engage with statutes on deception.</p> <p>23 MS. PATRICK: Objection,</p> <p>24 nonresponsive.</p> <p>25 Q. My question, sir, was the</p>	<p>Page 95</p> <p>1 WEINBERG, Ph.D.</p> <p>2 action of Google violated any statute?</p> <p>3 MR. RENARD: Objection to the</p> <p>4 form of the question.</p> <p>5 A. So I will again repeat the</p> <p>6 caveat that my understanding is that my</p> <p>7 opinions may be used as a basis for other</p> <p>8 claims, but I myself will not be directly</p> <p>9 making those claims.</p> <p>10 Q. Thank you. All right, so let's</p> <p>11 talk -- we have been going about an hour.</p> <p>12 Do you want a break or do you want to keep</p> <p>13 going?</p> <p>14 MR. RENARD: If this is a good</p> <p>15 stopping point for you, it has been a</p> <p>16 little over an hour.</p> <p>17 MS. PATRICK: Sure. I'm happy</p> <p>18 to stop whenever.</p> <p>19 THE WITNESS: Let's do that</p> <p>20 then.</p> <p>21 MS. PATRICK: So we will come</p> <p>22 back -- what time do you normally eat</p> <p>23 lunch sir?</p> <p>24 THE VIDEOGRAPHER: Let me just</p> <p>25 take us off before we get into this.</p>

25 (Pages 94 - 97)

<p style="text-align: right;">Page 98</p> <p>1 WEINBERG, Ph.D. 2 Off the record 11:42 a.m. 3 (Recess taken.) 4 THE VIDEOGRAPHER: We are back 5 on the record, 11:56 a.m. 6 BY MS. PATRICK: 7 Q. Professor, did you have a 8 chance to talk with your counsel on the 9 break? 10 A. Yes. 11 Q. Did you discuss your testimony? 12 A. Yes. 13 Q. Is there anything you feel like 14 you need -- did they ask you or suggest 15 that you should correct anything in the 16 last hour that we discussed? 17 A. No. 18 Q. What specifically did you 19 discuss about your testimony during the 20 break? 21 MR. RENARD: I will object to 22 that and instruct you not to answer. 23 Q. Let's look at your September 24 report, your rebuttal report, paragraph 56. 25 You know, Professor, if you want, I have</p>	<p style="text-align: right;">Page 100</p> <p>1 WEINBERG, Ph.D. 2 B')." 3 Do you see that? 4 A. Yes, I do. 5 Q. Now, just to be clear, the 6 deceptive conduct total impact framework is 7 Mr. Andrien's framework; is that right? 8 A. I would say that is the -- 9 that's the framework he uses. I don't know 10 whether he possesses or created that 11 framework, but that was the framework he 12 uses. 13 Q. Okay. But it's not your 14 framework? 15 A. I don't know that I would call 16 it my framework or his framework. It is a 17 framework. 18 Q. Well, the framework appears, 19 according to paragraph 56, in the Andrien 20 report, right? 21 A. Yes, that's correct. 22 Q. And he claims you say -- it 23 says there that, (A), every auction is 24 affected by Google's deceptive conduct, 25 that's from your opening report, right?</p>
<p style="text-align: right;">Page 99</p> <p>1 WEINBERG, Ph.D. 2 clean spiral-bound copies and I can give 3 you those so you don't have to flip pages. 4 Would you prefer? 5 A. I'm happy to use either. 6 Q. Well, I have these. 7 A. Ooh, yeah. 8 Q. Let's proceed. So paragraph 56 9 of your September report, do you see that? 10 A. Yes, I do. 11 Q. All right. And I'm going to 12 read that into the record and then we are 13 going to start having some conversation 14 about this, all right? 15 So paragraph 56, read along 16 with me, says "Using the Wiggins Report 17 Proposition, the Wiggins Report then 18 attempts to rebut the Andrien Report's 19 claim ('Deceptive Conduct Total Impact 20 Framework' or 'DTCI Framework') - which 21 relies on my Opening Report - that every 22 auction is affected by Google's Deceptive 23 Conduct ('Element A'), and (B) the impact 24 of that deception affects all revenue from 25 Google's display ad auctions ('Element</p>	<p style="text-align: right;">Page 101</p> <p>1 WEINBERG, Ph.D. 2 A. Sorry, can you repeat the 3 question? I'm going to parse it slowly. 4 Q. I'm just reading from your 5 paragraph 56. You say "Mr. Andrien relies 6 on my opening report." Do you see that? 7 A. Yes. 8 Q. That, (A), so is the language 9 that comes after (A) your opinion or 10 Mr. Andrien's opinion? 11 A. The language that comes after 12 (A), which says "every auction is affected 13 by Google's deceptive conduct," is my 14 opinion. 15 Q. All right. And what about the 16 language that comes after (B), is that your 17 opinion or Mr. Andrien's? 18 MR. RENARD: I object to the 19 form. 20 A. The language that comes after 21 Element B is not an opinion contained in my 22 reports because I do not -- it's not part 23 of my assignment. I do not quantify. 24 Q. Okay. So you have no opinion 25 and have expressed none that the impact of</p>

<p style="text-align: right;">Page 102</p> <p>1 WEINBERG, Ph.D. 2 deception affected all revenue from 3 Google's display ad auctions, true? 4 A. I have opinions that might form 5 a basis for that, but that is not my own 6 stated opinion.</p> <p>7 Q. You understand Mr. Andrien is 8 relying for opinions of yours to make that 9 determination?</p> <p>10 MR. RENARD: Objection to form.</p> <p>11 A. I understand that Mr. Andrien 12 is relying on my report, and I understand 13 that Element B is one of his 14 determinations, and I understand that 15 opinions in my report could be used as a 16 basis to conclude Element B.</p> <p>17 Q. But Element B is not your own 18 conclusion?</p> <p>19 A. That is correct. Element B is 20 not my own conclusion.</p> <p>21 Q. And you have not, and do not 22 expect to, quantify the extent to which 23 deception affected any or all of Google's 24 revenues, true?</p> <p>25 A. I do not intend to express an</p>	<p style="text-align: right;">Page 104</p> <p>1 WEINBERG, Ph.D. 2 A. Yes, I believe I said about a 3 month ago, and that date sounds correct. 4 Q. And let's just confirm it. I'm 5 not going to mark this as an exhibit, but 6 just to confirm it, this is the expert 7 rebuttal report of Mr. Andrien. Do you see 8 that?</p> <p>9 A. Yes.</p> <p>10 Q. Dated September 9th, 2024. Do 11 you see that?</p> <p>12 A. Yes.</p> <p>13 Q. And in that report at his 14 Appendix 2, page 3 of 3, he indicates the 15 date of his interview with you as September 16 8th, 2024. Do you see that?</p> <p>17 A. Yes, I see that.</p> <p>18 Q. And have you read Mr. Andrien's 19 rebuttal report, sir?</p> <p>20 A. No, I have not read his 21 rebuttal report.</p> <p>22 Q. Are you aware that he cites 23 your rebuttal report in his rebuttal 24 report?</p> <p>25 A. That doesn't surprise me.</p>
<p style="text-align: right;">Page 103</p> <p>1 WEINBERG, Ph.D. 2 opinion quantifying the damages related to 3 deceptive conduct, that's correct. 4 Q. Or the amount of revenue that 5 was affected by deceptive conduct, right? 6 A. That is correct, yes. 7 Q. Now, Mr. Andrien, I checked 8 during the break, your interview with 9 Mr. Andrien, by the way, Mr. Andrien is a 10 Mr., right, he is not a professor or 11 doctor? 12 A. I believe that is correct. 13 Q. And according to Mr. Andrien's 14 report, your interview with him, which was 15 the only time you have spoken to him, you 16 have told me, right? 17 A. That is correct, yes. 18 Q. And he says your interview with 19 him occurred on September 8th, 2024. I can 20 show it to you if you would like. 21 A. That's okay. 22 MR. RENARD: I don't think 23 there was a pending question yet. 24 Q. Does that conform to your 25 memory?</p>	<p style="text-align: right;">Page 105</p> <p>1 WEINBERG, Ph.D. 2 Q. Your rebuttal report is also 3 dated September 9th; is that right? 4 A. That is correct, my rebuttal 5 report is dated September 9th. 6 Q. So how in a report prepared by 7 Mr. Andrien dated September 9th did he 8 consider or cite your rebuttal report also 9 dated September 9th? 10 MR. RENARD: Objection to the 11 form. 12 A. I don't know or have an opinion 13 on how Mr. Andrien formed his report. 14 Q. Did you give him a draft of 15 your rebuttal report before September 9th? 16 A. I don't know what he had access 17 to before September 9th. 18 Q. But you certainly did not give 19 him a draft of your rebuttal report, did 20 you, directly? 21 A. I did not directly give him a 22 draft of my rebuttal report, that is 23 correct. 24 Q. And just to tie this out, if 25 you will just -- I will just look at a</p>

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<p>1 WEINBERG, Ph.D. 2 random page. Page 64 is a number of 3 footnotes. You see there they cite the 4 Weinberg rebuttal report dated September 5 9th, 2024? Do you see that? 6 A. I see that these footnotes cite 7 the Weinberg rebuttal report, and my 8 rebuttal report is dated September 9th, 9 2024. September 9th is not written in 10 these footnotes themselves. 11 Q. But so we have the chronology 12 clear, you had not spoken directly to 13 Mr. Weinberg until September 8th, true? 14 MR. RENARD: You mean 15 Mr. Andrien? 16 MS. PATRICK: I'm sorry, thank 17 you. 18 Q. You had not spoken directly to 19 Mr. Andrien until September 8th of 2024; is 20 that right? 21 A. Yes, I had not spoken to 22 Mr. Andrien before September 8th. 23 Q. And you had not yourself 24 provided him a draft of your rebuttal 25 report before you spoke to him on September</p>	<p>Page 106</p> <p>1 WEINBERG, Ph.D. 2 there? 3 MR. RENARD: Same objection. 4 A. I was not involved in the 5 process of drafting his report, so I have 6 no way of knowing how he drafted his 7 report. 8 Q. Now, one of the things I noted 9 in your report is that you draw a 10 distinction between what you call default 11 participants and what you call 12 sophisticated participants. Are you 13 familiar with that? 14 A. I would actually say I draw a 15 distinction between default and 16 sophisticated and fully informed. 17 Q. So three distinctions? 18 A. No, there are two terms; one is 19 default, the other is sophisticated and 20 fully informed. Sophisticated is also a 21 term I defined. 22 Q. Okay. And so before you 23 testified in this case or prepared your 24 report in this case had you ever seen in 25 any published scholarship the term</p>
<p>1 WEINBERG, Ph.D. 2 8th? 3 A. I'm not sure what he had access 4 to. I did not directly send him a draft of 5 my rebuttal report before September 8th. 6 Q. Were you asked to provide a 7 copy of your draft rebuttal report to 8 Mr. Andrien so he could review it? 9 MR. RENARD: That inquires into 10 matters that are nondiscoverable under 11 the Court's order regarding experts, 12 and consequently, Professor, I will 13 instruct you not to answer the 14 question. 15 Q. Can you explain how Mr. Andrien 16 was able to draft and cite in his rebuttal 17 report extensive citations to your rebuttal 18 report on the same day your rebuttal report 19 was prepared? 20 MR. RENARD: Objection to the 21 form. 22 A. I don't know how Mr. Andrien 23 formed his report. 24 Q. And you can't account for how 25 he is able to cite your rebuttal report</p>	<p>Page 107</p> <p>1 WEINBERG, Ph.D. 2 "deceptive conduct total impact framework"?</p> <p>3 A. I doubt it. 4 Q. Why do you doubt it? 5 A. I'm saying basically no, but I 6 don't remember everything that I have seen 7 in every academic work I have read. 8 Q. Okay. So basically no, you 9 have never seen that framework published in 10 any peer-reviewed scholarship that you can 11 recall? 12 A. It is maybe worth clarifying 13 that I tend to read peer-reviewed 14 scholarship and auction theory for 15 algorithm design or mechanism design, and 16 deceptive conduct total impact framework 17 would be used to analyze within those 18 perspectives deceptive conduct. I would 19 just say maybe it is not -- it is not a 20 common topic to write about in auction 21 theory. 22 Q. Okay. So deceptive conduct 23 total impact framework is not a common 24 topic to write about in auction theory? 25 A. Maybe let me take a step back</p>

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<p style="text-align: right;">Page 110</p> <p>1 WEINBERG, Ph.D. 2 and say that mathematical modeling is a 3 very common topic to write about in auction 4 theory. Deceptive conduct total impact 5 framework is an application of mathematical 6 modeling which is very common to the 7 particular case at hand, which is Texas v. 8 Google, and because there is no academic 9 research on the particulars of Texas v. 10 Google, this particular framework would not 11 have appeared in peer-reviewed publication. 12 Q. Okay. So let's see if I can 13 break that down. Mathematic modeling is a 14 common technique to test propositions, 15 true? 16 MR. RENARD: Objection to form. 17 A. That's not how I would phrase 18 it. 19 Q. Okay. So if I understand what 20 you are saying, number one, you cannot tell 21 the jury that you're aware of any scholarly 22 publications in your field that have 23 established that -- or that have evaluated 24 the deceptive conduct total impact 25 framework, true?</p>	<p style="text-align: right;">Page 112</p> <p>1 WEINBERG, Ph.D. 2 modeling applied to deceptive conduct? 3 A. Broadly, yes. 4 Q. And in specific to the purchase 5 or sale of online ads, have you seen it 6 applied? 7 A. I have seen it applied to -- I 8 have seen it applied in circumstances that 9 would apply to ad auctions. I have not 10 seen it applied to cases that are specific 11 to ad auctions but not other situations. 12 Q. All right. Now, one of the 13 things that you say here is that every 14 auction is affected by Google's deceptive 15 conduct; is that right? 16 A. That is correct. 17 Q. But you have -- you have 18 performed no sampling or quantitative study 19 to show how many transactions were affected 20 by, for example, reserve price 21 optimization; is that true? 22 MR. RENARD: Objection to form. 23 A. So maybe I will first -- I will 24 first note context and then answer the 25 letter of your question.</p>
<p style="text-align: right;">Page 111</p> <p>1 WEINBERG, Ph.D. 2 A. I will give the same 3 clarification, which is that I am aware of 4 many publications and auction theory, 5 including several of my own, that use 6 mathematical modeling to take evidence of a 7 particular situation, mathematically model 8 it, to form a concrete mathematical model, 9 and then do analysis within that model. 10 The part that I have not seen 11 in prior academic work is that methodology 12 applied to the particular case of Texas v. 13 Google, and the deceptive conduct total 14 impact framework is the result of applying 15 that kind of methodology to Texas v. 16 Google. 17 Q. So this is, in that sense, an 18 unprecedented use of it, true? 19 MR. RENARD: Objection to form. 20 Q. You have never seen it before? 21 MR. RENARD: Objection to form. 22 A. Again, prior to this case I 23 have not seen mathematical modeling applied 24 to Texas v. Google. 25 Q. And have you seen mathematical</p>	<p style="text-align: right;">Page 113</p> <p>1 WEINBERG, Ph.D. 2 In my report on page 43, 3 Section G, starting in paragraph 138, I 4 write that "There are two manners by which 5 the Deceptive Conduct affecting Google's 6 Display Advertising RTB Ecosystem could 7 influence any auction." I will summarize 8 the two arguments there. The first one is 9 that participants are attracted to systems 10 that are simple, and so when Google 11 deceptively describes AdX as a second price 12 auction or GDN as a tool that optimizes on 13 behalf of its advertisers, this would cause 14 bidders to use those tools when they might 15 not have if they knew how complex they were 16 or that those descriptions were inaccurate. 17 And then once they are in the system, the 18 only reason they are bidding on impressions 19 in the first place is because of Google's 20 deception. 21 The second is that when a 22 participant may have realized that Google's 23 text descriptions are not accurate, but 24 they are unable to figure out the actual 25 auction format, they may behave in</p>

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<p>1 WEINBERG, Ph.D. 2 unpredictable ways, and there is indeed 3 evidence that I have cited in my report in 4 paragraphs 142 and 143 and 144 that 5 describe that this indeed occurred. And so 6 what that means is that RPO could be active 7 on one impression but impact behavior on 8 another.</p> <p>9 So I give that as context to 10 say that there is -- there are arguments in 11 my report that support the conclusion that 12 Google's deceptive conduct impacted every 13 auction. And then for the letter, in terms 14 of do I do quantitative analysis to count 15 the number that were impacted by RPO, no, I 16 do not do that in my report.</p> <p>17 MS. PATRICK: Objection, 18 nonresponsive.</p> <p>19 Q. We can agree there is truth in 20 the world about this statement: You did or 21 you did not do quantitative sampling to 22 demonstrate the number of transactions that 23 were specifically affected by reserve price 24 optimization?</p> <p>25 MR. RENARD: I'm sorry, wasn't</p>	<p>Page 114</p> <p>1 WEINBERG, Ph.D. 2 method of quantitative sampling to quantify 3 the number that were impacted by RPO, for 4 example.</p> <p>5 Q. Also true, you did no 6 quantitative sampling to show how many 7 transactions were affected by dynamic 8 revenue sharing?</p> <p>9 A. I will summarize that in my 10 report I use a different method which are 11 the two arguments, I will just repeat 12 quickly those two arguments, which is that 13 participants would not even be in Google's 14 ecosystem but for Google's deception, and 15 that conduct that directly affects one 16 auction could impact behavior in another 17 auction. These are the methodologies by 18 which I conclude that DRS impacted every 19 auction and it is correct that I do not use 20 quantitative sampling to draw that 21 conclusion, I use a different methodology.</p> <p>22 Q. So you did not use quantitative 23 sampling to draw any conclusions about 24 dynamic revenue sharing, true?</p> <p>25 A. That is correct, I did not use</p>
<p>1 WEINBERG, Ph.D. 2 that the last sentence of his answer?</p> <p>3 MS. PATRICK: I want a clear 4 answer to my question and I'm entitled 5 to it.</p> <p>6 MR. RENARD: Then I object.</p> <p>7 Q. I really don't -- I don't think 8 this is that hard. True or false, you did 9 not do quantitative sampling to demonstrate 10 the number of transactions that were 11 specifically affected by reserve price 12 optimization?</p> <p>13 MR. RENARD: I'm going to 14 object to the statement, "I don't think 15 this is that hard," and move to strike 16 it. If you understand the question, go 17 ahead and answer it.</p> <p>18 Q. Do you need the question again, 19 sir?</p> <p>20 A. No. So maybe I will summarize 21 what I said previously, which is just in my 22 report, I give arguments for why Google's 23 deceptive conduct impacted every auction. 24 Maybe I won't repeat those arguments, and I 25 will say true, I did not use the particular</p>	<p>Page 115</p> <p>1 WEINBERG, Ph.D. 2 quantitative sampling to draw conclusions 3 about dynamic revenue sharing.</p> <p>4 Q. You also did not use 5 quantitative sampling to draw conclusions 6 about Bernanke, true?</p> <p>7 A. That is also correct, I did not 8 use quantitative sampling to draw 9 conclusions about Bernanke.</p> <p>10 Q. And you did no study to show 11 how many specific transactions were 12 transactions in which dynamic revenue 13 sharing occurred, true?</p> <p>14 A. If by dynamic revenue sharing 15 occurred, you mean the transaction would 16 not have cleared but for dynamic revenue 17 sharing, then I did not do quantitative 18 analysis to determine how many 19 transactions -- on how many transactions it 20 is the case that the transaction cleared 21 only because of dynamic revenue sharing.</p> <p>22 Q. All right. And, similarly, did 23 you do any study to quantify how many 24 transactions used reserve price 25 optimization?</p>

<p style="text-align: right;">Page 118</p> <p>1 WEINBERG, Ph.D.</p> <p>2 A. If by used reserve price</p> <p>3 optimization you mean the reserve price was</p> <p>4 increased due to reserve price</p> <p>5 optimization, no, I did not do any</p> <p>6 quantitative analysis to determine how many</p> <p>7 impressions used reserve price</p> <p>8 optimization.</p> <p>9 Q. And, similarly, did you do any</p> <p>10 study to quantify how many transactions</p> <p>11 were ones in which the Bernanke algorithm</p> <p>12 was used?</p> <p>13 A. My understanding is that the</p> <p>14 Bernanke algorithm was always used from the</p> <p>15 moment it was developed, but I did not do</p> <p>16 quantitative analysis to confirm that or</p> <p>17 count the number of transactions that</p> <p>18 occurred since Bernanke was developed.</p> <p>19 Q. And can you identify a single</p> <p>20 ad buyer that would not have joined</p> <p>21 Google's ad tech ecosystem if every detail</p> <p>22 of reserve price optimization had been</p> <p>23 public?</p> <p>24 A. I cannot cite a specific</p> <p>25 advertiser that I know would not have</p>	<p style="text-align: right;">Page 120</p> <p>1 WEINBERG, Ph.D.</p> <p>2 identified any single ad buyer that would</p> <p>3 not have joined Google's ecosystem if</p> <p>4 dynamic revenue sharing had been disclosed</p> <p>5 in every detail?</p> <p>6 A. I will repeat the same context,</p> <p>7 which is that it is generally accepted, as</p> <p>8 stated in the Milgrom report, that bidders</p> <p>9 tend to prefer ecosystems that are simple.</p> <p>10 I will go ahead and read the quote this</p> <p>11 time. The Milgrom report states "Google</p> <p>12 recognized the advantages of bidder</p> <p>13 truthful auctions, explaining them as</p> <p>14 follows: It is faster, less costly, and</p> <p>15 more fair to the less sophisticated</p> <p>16 advertisers to structure the auction in</p> <p>17 favor of true value. The lower transaction</p> <p>18 costs associated with bidding in a bidder</p> <p>19 truthful auction encourage advertisers to</p> <p>20 participate on Google's platform, which</p> <p>21 increases thickness, tending to improve the</p> <p>22 efficiency of its allocations and increase</p> <p>23 the prices paid to publishers."</p> <p>24 That is the methodology by</p> <p>25 which I draw my conclusions, but I will</p>
<p style="text-align: right;">Page 119</p> <p>1 WEINBERG, Ph.D.</p> <p>2 joined Google's ecosystem if every --</p> <p>3 unless -- I'm sorry, if every detail of RPO</p> <p>4 were not made public. I will again add as</p> <p>5 context that the concept that bidders tend</p> <p>6 to join simple auction environments is a</p> <p>7 concept that is stated in the Milgrom</p> <p>8 report, and that is not a controversial</p> <p>9 opinion.</p> <p>10 Q. Controversial or not, you</p> <p>11 agree, you have not identified a single ad</p> <p>12 buyer that would not have joined Google's</p> <p>13 ad tech ecosystem if every detail of</p> <p>14 reserve price optimization had been public?</p> <p>15 A. I will again repeat the</p> <p>16 context, is that my opinion is that bidders</p> <p>17 in general tend to join simple ecosystems.</p> <p>18 That opinion is stated in the Milgrom</p> <p>19 report. That being said, I have not</p> <p>20 identified a particular advertiser that I</p> <p>21 know would not have joined Google's</p> <p>22 ecosystem if RPO had been fully and</p> <p>23 accurately disclosed.</p> <p>24 Q. And the same question about</p> <p>25 dynamic revenue sharing, have you</p>	<p style="text-align: right;">Page 121</p> <p>1 WEINBERG, Ph.D.</p> <p>2 again state that I do not know of a</p> <p>3 particular advertiser that I am confident</p> <p>4 only joined Google's ecosystem because they</p> <p>5 believed it to be bidder truthful.</p> <p>6 Q. And the same questions about</p> <p>7 Bernanke, context about what bidders in</p> <p>8 general might do, you cannot tell the jury</p> <p>9 as you sit here today that you are aware of</p> <p>10 a single bidder that would not have joined</p> <p>11 Google's ad tech ecosystem if every detail</p> <p>12 of Bernanke had been disclosed, true?</p> <p>13 A. That is again true, and I will</p> <p>14 again repeat the same context, which is</p> <p>15 from the Milgrom report states "Google</p> <p>16 recognized the advantages of bidder</p> <p>17 truthful auctions, explaining them as</p> <p>18 follows: It is faster, less costly and</p> <p>19 more fair to the less sophisticated</p> <p>20 advertisers to structure the auction in</p> <p>21 favor of true value. The lower transaction</p> <p>22 costs associated with bidding in a bidder</p> <p>23 truthful auction encourage advertisers to</p> <p>24 participate on Google's platform."</p> <p>25 And that is the methodology</p>

<p style="text-align: right;">Page 122</p> <p>1 WEINBERG, Ph.D. 2 from which I draw my conclusions, although 3 as you asked, I do not know a particular 4 advertiser that I know for certain only 5 joined -- only used GDN because of Google's 6 deception.</p> <p>7 Q. All right. And, similarly, you 8 made an assumption that what you called 9 default participants predominate in the 10 ecosystem; is that right?</p> <p>11 MR. RENARD: Objection to the 12 form of the question.</p> <p>13 A. I don't know that I would -- I 14 wouldn't phrase it that way.</p> <p>15 Q. All right. Look at your errata 16 sheet, sir. Did you change one of your 17 observations about errata -- about default 18 participants in your errata sheet?</p> <p>19 A. Sorry, can you rephrase the 20 question?</p> <p>21 Q. Uh-huh. Did you change one of 22 your observations in your errata sheet 23 related to default participants 24 predominating?</p> <p>25 A. What I changed was in paragraph</p>	<p style="text-align: right;">Page 124</p> <p>1 WEINBERG, Ph.D. 2 I share that to note that the 3 definition in 153 immediately precedes my 4 analysis and was always the intended 5 definition. There was a drafting error 6 that caused the restating of that 7 definition in paragraph 44 to not be as I 8 had intended.</p> <p>9 Q. All right. So let's be clear, 10 then, about what I was asking you. In 11 paragraph 153, which you just called to my 12 attention, you said sophisticated 13 participants exist in the system who may be 14 fully or well informed about some conduct, 15 true?</p> <p>16 A. Yes, that is correct.</p> <p>17 Q. And there are also what you 18 call default participants. Do you see 19 that?</p> <p>20 A. Yes, that's correct.</p> <p>21 Q. And those participants are the 22 participants you presume rely on Google's 23 disclosures, right?</p> <p>24 MR. RENARD: Objection to form.</p> <p>25 A. Yes, that's correct.</p>
<p style="text-align: right;">Page 123</p> <p>1 WEINBERG, Ph.D. 2 44 --</p> <p>3 Q. Of your rebuttal report, sir?</p> <p>4 A. Of the rebuttal report. I will 5 go ahead and read the errata. At the end 6 of the sentence it initially said "Default 7 Participants and Sophisticated Participants 8 (i.e. collectively, all participants)." 9 And it should say "predominantly Default 10 participants, acknowledging some are not."</p> <p>11 I'm going to quickly read 12 from --</p> <p>13 Q. Paragraph 114?</p> <p>14 A. No, paragraph 153. So in 15 paragraph 153 I write "My Opening Report 16 further discusses that the impact of 17 Google's Deceptive Conduct is predominantly 18 determined by its impact on Default 19 Participants while acknowledging that 20 Sophisticated Participants, who may be 21 Fully or Well Informed about some conduct, 22 also exist in the Google's Display 23 Advertising RTB Ecosystem. Herein, as 24 defined above, I refer to this framework as 25 the Weinberg Framework."</p>	<p style="text-align: right;">Page 125</p> <p>1 WEINBERG, Ph.D.</p> <p>2 Q. All right. And as you sit here 3 today you have not quantified how many 4 participants in the Google ecosystem are 5 sophisticated participants; is that true?</p> <p>6 A. That is correct.</p> <p>7 Q. And you also have not 8 quantified how many participants in the 9 Google ecosystem are default participants, 10 true?</p> <p>11 A. That is also correct.</p> <p>12 Q. And as it pertains to 13 sophisticated participants, do you know how 14 many publishers met your definition of a 15 sophisticated publisher?</p> <p>16 A. No, I do not know exactly how 17 many publishers met my definition of a 18 sophisticated publisher.</p> <p>19 Q. And, similarly, you do not know 20 how many advertisers met your definition of 21 a sophisticated advertiser?</p> <p>22 A. That is also correct, I do not 23 know how many advertisers exactly met the 24 definition of sophisticated advertiser.</p> <p>25 Q. Or how many participants in the</p>

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<p style="text-align: right;">Page 126</p> <p>1 WEINBERG, Ph.D. 2 ecosystem met the definition of default 3 participants? 4 A. That is also correct, I do not 5 know exactly how many participants in the 6 ecosystem were default participants. 7 Q. And therefore do not know which 8 transactions, if any, were conducted by 9 sophisticated publishers as opposed to 10 default publishers? 11 A. I myself do not know which 12 transactions were conducted by 13 sophisticated or default publishers. 14 Q. But you acknowledge in your 15 report, do you not, that sophisticated 16 publishers may not have been affected by 17 Google's representations and disclosures, 18 true? 19 MR. RENARD: Objection to form. 20 A. I don't believe I stated that 21 sophisticated publishers may not have been 22 affected. 23 Q. We will come back to that in 24 your report. If I can direct your 25 attention to page 13 of your September</p>	<p style="text-align: right;">Page 128</p> <p>1 WEINBERG, Ph.D. 2 "deceptive" in its ordinary meaning? 3 MR. RENARD: Objection to form. 4 A. The definition I use is 5 consistent with the dictionary definition, 6 but in the interest of precision, I use the 7 term "deceptive conduct" as I have defined 8 it precisely in the definitions. 9 Q. So your term "deceptive 10 conduct" is not drawn from any particular 11 statute or how the statute defines 12 deceptive conduct; is that right? 13 MR. RENARD: Objection to form. 14 A. I do not intend for it to be 15 similar or dissimilar to any particular 16 statute. I don't know whether it happens 17 to be similar or dissimilar to statutes. 18 Q. You also use the word 19 "transparent." Do you see that? Paragraph 20 30. 21 A. Yes. 22 Q. And there you actually use the 23 dictionary definition, right? You cite the 24 Merriam-Webster Dictionary, the one you 25 have in front of you? Well, you cited the</p>
<p style="text-align: right;">Page 127</p> <p>1 WEINBERG, Ph.D. 2 rebuttal report, paragraph 34, you define a 3 term, "deceptive conduct." Do you see 4 that? 5 A. Yes, I see that. 6 Q. And in it, it has got several 7 lines of information. Does the term 8 "deceptive" have an ordinary meaning in 9 plain English? 10 MR. RENARD: Objection to form. 11 A. There must be a dictionary 12 definition of deceptive, yes. 13 Q. Well, let's look at it. Here 14 is your dictionary again. 15 A. Thank you. 16 Q. You see there it says "tending 17 or having the power to deceive"?</p> <p>18 A. Yes. 19 Q. Is that your definition of 20 deceptive? 21 MR. RENARD: Objection to form. 22 A. The definition of deceptive 23 that I use is the one in my report given in 24 paragraph 34 that you referenced. 25 Q. So you are not using the term</p>	<p style="text-align: right;">Page 129</p> <p>1 WEINBERG, Ph.D. 2 online one, but it is the same dictionary. 3 A. Yes. 4 Q. Okay. And there you said 5 "Transparent is free from pretense or 6 deceit, easily detected or seen through, 7 readily understood, characterized by 8 visibility or accessibility of 9 information," right? 10 A. Yes, that is correct. 11 Q. And then you use that term 12 "transparent" to define another term called 13 "transparent disclosure." Do you see that? 14 A. Yes, that's correct. 15 Q. That's in paragraph 31. And 16 there you say "A transparent disclosure, as 17 used herein, refers to disclosures that are 18 likely to or reasonably believed would 19 contribute to, assist, or allow a 20 participant to behave more optimally 21 because the disclosure reveals information 22 that is truthful, equally accessible, and 23 informative." 24 That's what you wrote, right? 25 A. Yes, that is correct.</p>

<p style="text-align: right;">Page 130</p> <p>1 WEINBERG, Ph.D. 2 Q. And you use the term 3 "participant" there. What kind of 4 participants, a sophisticated participant 5 or a default participant? 6 MR. RENARD: Objection to form. 7 A. This would apply equally to any 8 participant. 9 Q. Now, your definition of a 10 transparent disclosure posits that it would 11 allow a participant to behave more 12 optimally. Is that in your definition 13 there? 14 A. Yes, that is correct. 15 Q. But that does not mean a 16 participant will actually behave more 17 optimally in the face of a disclosure, does 18 it? 19 A. No, it does not. That is 20 correct. 21 Q. For example, I can make a 22 transparent disclosure in a contract I have 23 with someone, but if that person doesn't 24 read the contract, they are not behaving 25 optimally, right?</p>	<p style="text-align: right;">Page 132</p> <p>1 WEINBERG, Ph.D. 2 transparent, but I agree that that alone 3 does not imply a disclosure is definitely 4 not transparent. 5 Q. For example, go back to my 6 contract example where I have a contract 7 that says these are the rights I have, 8 these are the rights you have, and you 9 don't read it, and let's further posit that 10 I define accurately in that contract what 11 my rights are. Are you with me? 12 A. Yes. 13 Q. In that circumstance, the fact 14 that you did not read the contract does not 15 mean the contract was deceptive, true? 16 MR. RENARD: Objection to form. 17 A. I agree that if one tried to 18 claim that a contract was deceptive because 19 someone who didn't read it behaved 20 suboptimally, that would be a flawed 21 argument, I agree with that. 22 Q. And, similarly, you would agree 23 that if a contract discloses what is 24 material about the transaction, it is also 25 not deceptive?</p>
<p style="text-align: right;">Page 131</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to form. 3 A. Yes, it is possible to have a 4 transparent disclosure and to still have 5 suboptimal behavior, that is correct. 6 Q. And you understand that if a 7 disclosure is transparent and accurate, the 8 fact that someone's behavior is suboptimal 9 is not a violation of any law? 10 MR. RENARD: Objection to form. 11 Q. Do you understand that? 12 MR. RENARD: Same objection. 13 A. I don't have an opinion on what 14 violates or doesn't violate the relevant 15 statutes here. 16 Q. Okay. Let's come at it this 17 way: A disclosure can be transparent and 18 accurate, and the fact that someone's 19 behavior and response is suboptimal does 20 not mean the disclosure is deceptive in 21 your view, does it? 22 A. It could be useful evidence -- 23 evidence of suboptimal behavior -- evidence 24 of suboptimal behavior could be used as 25 evidence to argue that a disclosure was not</p>	<p style="text-align: right;">Page 133</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to the 3 form of the question. 4 A. A contract could be transparent 5 if it discloses everything that all parties 6 consider to be material, while 7 acknowledging that parties may disagree 8 about what is considered material. 9 Q. But in that circumstance, using 10 your phrase, a contract could be 11 transparent if it discloses everything that 12 all parties consider to be material, a 13 contract like that would not be deceptive, 14 would it? 15 MR. RENARD: Objection to form. 16 A. So I will just go through the 17 definition I have in paragraph 34. I will 18 note that a contract could be part of a 19 larger conduct, but when looking at that 20 contract in isolation the contract you 21 described as disclosing all material 22 information with no misrepresentations 23 would not misrepresent material 24 information, it would not be incomplete, it 25 could be untimely, but let's assume that</p>

<p style="text-align: right;">Page 134</p> <p>1 WEINBERG, Ph.D. 2 the contract was presented in a timely 3 manner, it does not conceal material 4 information, and there was no nondisclosure 5 of material information, and so then the 6 rest of the definition is not relevant. 7 And so that contract in itself would not 8 meet the definition of deceptive conduct. 9 Q. Okay. Now, your definition of 10 transparent allows that it would -- 11 includes that it would allow a participant 12 to behave more optimally, but are you 13 saying that conduct qualifies as deceptive 14 even if a disclosure has informed the world 15 about the material aspects of the conduct 16 but not in a way that helps participants to 17 optimize their behavior?</p> <p>18 MR. RENARD: I object to the 19 form.</p> <p>20 Q. Let me tell you -- let me tell 21 you my dilemma and maybe it will help, 22 okay? You acknowledge that we live in a 23 world where people do not always behave 24 optimally even in the face of complete 25 information, right?</p>	<p style="text-align: right;">Page 136</p> <p>1 WEINBERG, Ph.D. 2 A. If a party provides accurate, 3 complete, timely information in a manner 4 that they believe to be understandable by 5 the recipient, then that act alone would 6 not be deceptive. 7 Sorry, if I can add, that 8 action does not necessarily excuse other 9 deceptive actions related to similar 10 conduct, but that action alone would not be 11 deceptive.</p> <p>12 Q. So, for example, you know that 13 at some point reserve price optimization 14 was disclosed by Google, right?</p> <p>15 A. We discussed this morning that 16 in my rebuttal report, after seeing more 17 information, I do not consider the 18 disclosure of RPO to be meaningful.</p> <p>19 Q. Okay. So we will talk about 20 that a little bit more in a moment. But 21 let's ask now another question about 22 transparency. 23 Is transparency always 24 economically efficient?</p> <p>25 MR. RENARD: Objection to form.</p>
<p style="text-align: right;">Page 135</p> <p>1 WEINBERG, Ph.D. 2 A. Yes, I agree we live in a world 3 where people sometimes behave suboptimally 4 even in the face of complete information. 5 Q. And in that circumstance, the 6 person providing the accurate information 7 has done what they can do?</p> <p>8 MR. RENARD: Objection to form.</p> <p>9 A. I feel like that's asking for a 10 moral judgment that would be very context 11 specific on the manner in which the 12 information were provided.</p> <p>13 Q. Well, I'm asking about your 14 opinion about deceptive conduct, okay?</p> <p>15 MR. RENARD: Well, I object to 16 the form of that statement.</p> <p>17 Q. Well, if a person provides 18 accurate information -- strike that.</p> <p>19 If a person provides accurate 20 and complete information to somebody with 21 whom it is engaging in a transaction, is 22 that deceptive conduct?</p> <p>23 MR. RENARD: Objection to the 24 form.</p> <p>25 Q. In your parlance.</p>	<p style="text-align: right;">Page 137</p> <p>1 WEINBERG, Ph.D. 2 A. I think that is a very 3 overarching question that would be hard to 4 give a yes or no to without knowing exactly 5 what does transparency mean exactly, what 6 does economic efficiency mean, and in what 7 kinds of settings you have in mind.</p> <p>8 Q. All right. So, for example, 9 you can agree that it is economically 10 efficient for Coke, Coca-Cola, to 11 manufacture Coke, right?</p> <p>12 MR. RENARD: Objection.</p> <p>13 Q. That's their product.</p> <p>14 MR. RENARD: Objection to form.</p> <p>15 Q. Let me rephrase the question. 16 You know that Coca-Cola 17 manufactures Coke, right?</p> <p>18 A. Yes, I do know that, assuming 19 the name of the company is correct and 20 everything, yes, I believe Coca-Cola is the 21 company that manufactures Coke.</p> <p>22 Q. And you know there is a formula 23 for Coke, right, how you make it?</p> <p>24 A. I know that there is a list of 25 ingredients. I assume that they have a</p>

<p style="text-align: right;">Page 138</p> <p>1 WEINBERG, Ph.D. 2 process by which they make Coke, yes. 3 Q. Like Kentucky Fried Chicken has 4 17 herbs and spices, right? 5 A. I don't actually know much 6 about Kentucky Fried Chicken, but I will 7 believe you that that's accurate. 8 Q. Okay. And Coca-Cola, to your 9 knowledge, considers its formula for 10 manufacturing Coke to be proprietary 11 information, right? 12 MR. RENARD: Objection to the 13 form. 14 A. I don't actually know what 15 Coca-Cola considers to be proprietary 16 information, but I am familiar with the 17 concept of proprietary information. 18 Q. It would not surprise you that 19 Coca-Cola considers the recipe for Coke to 20 be proprietary, would it? 21 A. That would not surprise me, no. 22 Q. And you know about Costco, 23 right? 24 MR. RENARD: Objection to form. 25 A. I know of Costco, yes.</p>	<p style="text-align: right;">Page 140</p> <p>1 WEINBERG, Ph.D. 2 Q. And so the store selling that 3 off-brand stuff might very well like to 4 have the formula for Coca-Cola so their 5 off-brand cola tasted better, right? 6 MR. RENARD: Objection to form. 7 A. I understand why an 8 off-brand -- an off-brand producer may 9 benefit from understanding proprietary 10 information of a brand name producer, yes. 11 Q. And yet you would not sit here 12 and say that Coca-Cola had the obligation 13 to tell the grocery store in El Paso, Texas 14 how to manufacture their off-brand cola? 15 MR. RENARD: Objection to the 16 form. 17 A. I'm not an expert in -- I don't 18 even know what the right branch of law is, 19 maybe intellectual property, I don't know 20 what Coca-Cola's legal obligations would be 21 in that circumstance. 22 Q. But you would expect, having 23 drunk off-brand cola in your own life, that 24 somehow Coca-Cola was able to keep that 25 proprietary and not have to share it with</p>
<p style="text-align: right;">Page 139</p> <p>1 WEINBERG, Ph.D. 2 Q. And you know they have a 3 Kirkland brand, right? 4 A. I did not know about the 5 relationship between Costco and Kirkland. 6 Q. They have a store brand you 7 assume? 8 MR. RENARD: Objection to form. 9 A. I'm sorry, I don't understand 10 the question. 11 Q. Do you know -- have you ever, 12 maybe you haven't, bought store brand 13 things at the grocery store? 14 A. Yes, I have bought store brand 15 things at the grocery store. 16 Q. And when I was growing up, we 17 couldn't afford Coke, so we had off-brand 18 cola. Do you know what I mean? 19 A. Yes. 20 Q. We had something that was 21 supposed to taste like Coke, right, but it 22 didn't, because they didn't have the exact 23 recipe, right? 24 A. Yes, I had the same experience 25 in my childhood.</p>	<p style="text-align: right;">Page 141</p> <p>1 WEINBERG, Ph.D. 2 your local grocery store, true? 3 MR. RENARD: Same objection. 4 A. I actually didn't mind the 5 taste of the off-brand cola. But I 6 understand the point of the question. I'm 7 familiar with the concept of proprietary 8 information. 9 Q. And so therefore you understand 10 that secrecy about things like formulas is 11 important to the economy? 12 MR. RENARD: Objection to the 13 form of the question. 14 A. I would say I understand that 15 there is a reason why intellectual -- I 16 hope I'm using the right term -- why 17 intellectual property law exists, and I 18 understand why companies are legally 19 permitted to keep some things confidential. 20 Q. And, similarly, you are aware, 21 having worked, for example, at Andreessen 22 Horowitz, that technology companies 23 consider their source code to be highly 24 proprietary, right? 25 MR. RENARD: Objection to form.</p>

<p style="text-align: right;">Page 142</p> <p>1 WEINBERG, Ph.D.</p> <p>2 A. I don't want to make a</p> <p>3 representation about a particular tech</p> <p>4 company or tech companies generally, but it</p> <p>5 makes sense to me that a tech company would</p> <p>6 consider its source code proprietary.</p> <p>7 Q. And what is source code, sir?</p> <p>8 A. Source code is the underlying</p> <p>9 code that verbatim executes whatever the</p> <p>10 product is.</p> <p>11 Q. It is the -- it is the</p> <p>12 algorithms that tell the product how to</p> <p>13 operate?</p> <p>14 A. I would make a slight</p> <p>15 distinction that the source code implements</p> <p>16 the algorithms that are intended.</p> <p>17 Q. Okay. And you're not here</p> <p>18 advocating that Google has to make its</p> <p>19 source code for its advertising products</p> <p>20 openly available to its competitors, are</p> <p>21 you?</p> <p>22 MR. RENARD: Objection to form.</p> <p>23 A. No, I am not here to argue that</p> <p>24 Google should make all of its code open</p> <p>25 source.</p>	<p style="text-align: right;">Page 144</p> <p>1 WEINBERG, Ph.D.</p> <p>2 influenced by deceptive conduct as you</p> <p>3 describe it, true?</p> <p>4 MR. RENARD: I object to the</p> <p>5 question, form.</p> <p>6 A. Let me read a slightly</p> <p>7 different quote --</p> <p>8 Q. Can you answer my question</p> <p>9 first?</p> <p>10 A. Sure, I will answer the</p> <p>11 question and follow it with a different</p> <p>12 quote.</p> <p>13 That is correct that I do not</p> <p>14 find a particular transaction and assert</p> <p>15 that this particular transaction had its</p> <p>16 price increased by RPO when the advertiser</p> <p>17 did not know or this particular transaction</p> <p>18 had cleared in a dynamic region above the</p> <p>19 advertiser's bid, or this particular</p> <p>20 transaction was won by someone who would</p> <p>21 not have been in Google's ecosystem but for</p> <p>22 their deception. However, I do claim, this</p> <p>23 is now section header B on page 21, where I</p> <p>24 say "Google's Deceptive Conducts Impact the</p> <p>25 Entirety of Google's Display Advertising</p>
<p style="text-align: right;">Page 143</p> <p>1 WEINBERG, Ph.D.</p> <p>2 Q. Nor are you arguing that it is</p> <p>3 deceptive conduct for Google to keep its</p> <p>4 source code proprietary?</p> <p>5 MR. RENARD: Same objection.</p> <p>6 A. I also do not intend to argue</p> <p>7 that the decision to keep source code</p> <p>8 confidential is itself a deceptive act.</p> <p>9 Q. You also said, sir, that every</p> <p>10 ad tech auction should be considered</p> <p>11 deceptive during the period you considered,</p> <p>12 right?</p> <p>13 A. Let me just read an exact quote</p> <p>14 to remove confusion. On page 43, section</p> <p>15 header G, I say "Google's Deceptive Display</p> <p>16 Advertising RTB Ecosystem Could Influence</p> <p>17 Any Auction."</p> <p>18 Q. I'm sorry, where are you again?</p> <p>19 A. Sorry, the rebuttal report,</p> <p>20 page 43, section header G. "Google's</p> <p>21 Deceptive Display Advertising RTB Ecosystem</p> <p>22 Could Influence Any Auction."</p> <p>23 Q. Now, that use of "could" is of</p> <p>24 interest to me because you did not prove</p> <p>25 that any particular transaction was</p>	<p style="text-align: right;">Page 145</p> <p>1 WEINBERG, Ph.D.</p> <p>2 RTB Ecosystem."</p> <p>3 So while the particular section</p> <p>4 header G had a "could," there was no</p> <p>5 "could" in the section header B.</p> <p>6 Q. Right. So I want to</p> <p>7 distinguish, because what you say is it</p> <p>8 impacted the entire ecosystem, true?</p> <p>9 A. Yes, that's correct, I say that</p> <p>10 it impacted the entire ecosystem.</p> <p>11 Q. But you do not say, and you</p> <p>12 have not demonstrated, that any particular</p> <p>13 transaction was affected by reserve price</p> <p>14 optimization, what you call RPO, true?</p> <p>15 MR. RENARD: Objection to form.</p> <p>16 A. I do not find any particular</p> <p>17 impression that I know was impacted by the</p> <p>18 deceptive elements of RPO, that is correct.</p> <p>19 Q. And, similarly, you do not find</p> <p>20 any particular transaction that was</p> <p>21 affected by what you call the deceptive</p> <p>22 elements of dynamic revenue sharing, true?</p> <p>23 A. That is also correct, I do not</p> <p>24 find particular impressions on which I know</p> <p>25 they cleared in the dynamic region and</p>

<p style="text-align: right;">Page 146</p> <p>1 WEINBERG, Ph.D. 2 would not have cleared but for Google's 3 deception.</p> <p>4 Q. And when you are using the 5 phrase "Google's deception," just to be 6 clear, you are calling dynamic revenue 7 sharing deceptive, true?</p> <p>8 A. Yes, I'm calling dynamic 9 revenue sharing deceptive.</p> <p>10 Q. And, similarly, you do not find 11 any particular transaction that was 12 affected by what you call the deceptive 13 elements of Bernanke, true?</p> <p>14 MR. RENARD: Objection to form.</p> <p>15 A. I do not know any particular 16 impressions on which I know that a bidder 17 took suboptimal behavior due to the 18 deception surrounding Bernanke, that is 19 correct.</p> <p>20 Q. Okay. Now, do you know the 21 identity of the advertisers bidding in the 22 AdX auctions?</p> <p>23 MR. RENARD: Objection to form.</p> <p>24 A. I know some advertisers that 25 bid. I do not know the identity of</p>	<p style="text-align: right;">Page 148</p> <p>1 WEINBERG, Ph.D. 2 Q. You know that Google owns 3 Fitbit?</p> <p>4 A. I believe you that Google owns 5 Fitbit.</p> <p>6 Q. And YouTube?</p> <p>7 A. That one I knew, that Google 8 owns YouTube.</p> <p>9 Q. And did you consider whether 10 for its own products Alphabet, the parent 11 company, or Google, the operating company, 12 were bidding for ads for their products 13 like the Pixel phone or Fitbit or YouTube?</p> <p>14 A. Thank you for the 15 clarification. I do not believe any of my 16 opinions explicitly consider the case where 17 the ultimate advertiser, such as Fitbit, 18 was also Google.</p> <p>19 Q. Is it your opinion that ad 20 purchases by Fitbit, a company owned by 21 Google, were affected by deceptive conduct?</p> <p>22 MR. RENARD: Objection to form.</p> <p>23 A. Could you repeat the question 24 so I could hit every word exactly?</p> <p>25 Q. Is it your opinion that ad</p>
<p style="text-align: right;">Page 147</p> <p>1 WEINBERG, Ph.D. 2 particular advertisers currently bidding or 3 on particular auctions.</p> <p>4 Q. Did you consider whether Google 5 was an advertiser bidding in those auctions 6 for its own products?</p> <p>7 MR. RENARD: Objection to form.</p> <p>8 A. Assuming that by Google -- 9 sorry, Google appeared twice in that. So 10 assuming that the buyer bidding refers to a 11 Google product such as GDN or DV360 and the 12 auction into which they are bidding is AdX, 13 which is also Google, yes, for some of my 14 opinions it is relevant that Google 15 controls both the ad buying tool and the 16 exchange and the ultimate seller, which is 17 DFP.</p> <p>18 Q. Okay. So I think you missed my 19 question, so let me try again, and let me 20 add to it, see if it helps.</p> <p>21 You know that Google 22 manufactures Pixel phones, right?</p> <p>23 A. I know that Google manufactures 24 phones. I did not know they were called 25 Pixel, but I believe you.</p>	<p style="text-align: right;">Page 149</p> <p>1 WEINBERG, Ph.D. 2 purchases by Fitbit, a company owned by 3 Google, were affected by deceptive conduct?</p> <p>4 A. Yes.</p> <p>5 Q. Okay. Why?</p> <p>6 A. The publisher could be affected 7 by the deception.</p> <p>8 Q. Could be, but you didn't 9 determine that they were, true?</p> <p>10 MR. RENARD: Objection to the 11 form of the question.</p> <p>12 A. I interpreted the initial 13 question as asking whether the fact that 14 Fitbit is the advertiser that ultimately 15 won the impression necessarily implies that 16 the auction was not impacted by deception, 17 deceptive conduct, and I am saying that 18 that is incorrect, it is not the case that 19 just because Fitbit, which is owned by 20 Google, ultimately won the impression, 21 therefore the impression is not impacted by 22 deceptive conduct.</p> <p>23 Q. What about if the impression is 24 a display ad on YouTube?</p> <p>25 MR. RENARD: Objection to the</p>

<p style="text-align: right;">Page 150</p> <p>1 WEINBERG, Ph.D. 2 form. 3 A. The answer is still no. There 4 could be other bidders who were impacted by 5 the deceptive conduct. 6 Q. But that's your speculation, 7 because you haven't examined any particular 8 transactions, true? 9 MR. RENARD: Objection to the 10 form of the question. 11 A. I interpreted the most recent 12 question as asking is it the case that just 13 because the advertiser is Fitbit and the 14 publisher is YouTube, which are both owned 15 by Google, therefore that impression could 16 not be impacted by deceptive conduct, and 17 that is false. 18 Q. All right. And it is false 19 because somebody might have lost the 20 impression on YouTube? 21 A. Yes. 22 Q. That's the only circumstance in 23 which it could be false, right? 24 A. No. 25 Q. How else could it be false?</p>	<p style="text-align: right;">Page 152</p> <p>1 WEINBERG, Ph.D. 2 because if I have missed something in your 3 report, I need to know it. We have talked 4 a lot about ad buyers and ad sellers, true? 5 MR. RENARD: Professor Weinberg 6 was in the middle of a response. Now 7 it may be a response -- 8 MS. PATRICK: It was not 9 responsive. 10 MR. RENARD: You may find that 11 to be true, Counsel, and I'm not 12 arguing with you, but what I don't want 13 to happen here is an interruption of a 14 witness when he is in the middle of an 15 answer, what he believes is responsive 16 to your question. 17 MS. PATRICK: I don't want to 18 engage in argument of counsel. But a 19 lot of this has been deflecting from 20 the questions that I have actually 21 asked, and so I'm trying, in the 22 interest of time, to actually just get 23 an answer to my questions, and I think 24 I'm entitled to it. 25 MR. RENARD: I don't appreciate</p>
<p style="text-align: right;">Page 151</p> <p>1 WEINBERG, Ph.D. 2 A. There are other non-Google 3 exchanges in addition to non-Google 4 advertisers and non-Google ad buying. 5 MR. RENARD: Counsel, whenever 6 you get a chance on lunch. I don't 7 want to interrupt your flow, but if you 8 are at a convenient breaking point. 9 Q. Let me ask you one more 10 question or just a couple more to line this 11 out. 12 So in your scenario of 13 deception, you are not just encompassing ad 14 buyers and sellers, you are encompassing 15 competing exchanges who don't get the 16 transaction? Because I didn't see that in 17 your report. That's a little bit of a 18 surprise to me. 19 MR. RENARD: Objection to the 20 statement. Do you have the question in 21 mind? 22 A. Let me maybe try to answer that 23 with an example for why I said that. 24 Q. Before you give me an example, 25 Professor, I really do want to find out,</p>	<p style="text-align: right;">Page 153</p> <p>1 WEINBERG, Ph.D. 2 the argument or the innuendo or 3 accusation against the witness. But 4 what I would prefer is that if 5 Professor Weinberg is in the middle of 6 providing what he believes is 7 responsive, that you allow him the 8 courtesy of completing that, and then 9 if you have an objection to that, you 10 are free to make that and to rephrase 11 or reword or ask that the question be 12 responded to if you don't think it is 13 responsive. 14 A. I interpreted the question to 15 be asking or at least interested in why did 16 you say that there are non-Google exchanges 17 involved, why would that matter. The 18 reason I said that is because some of 19 Google's conduct, such as the last look 20 advantage, dynamic allocation, enhanced 21 dynamic allocation, have deceptive elements 22 to them, and those involve other exchanges, 23 and so advertisers and publishers can still 24 be impacted if they transact through a 25 non-Google exchange.</p>

<p>1 WEINBERG, Ph.D.</p> <p>2 Q. The focus of your report is on 3 the effect of what you call deceptive 4 conduct on auction participants in the 5 Google ecosystem, true?</p> <p>6 A. Yes, that's correct.</p> <p>7 Q. Okay. And we will come to it 8 after lunch, but you acknowledge that there 9 are other ad exchanges out there that 10 compete with Google, right?</p> <p>11 A. There are other ad exchanges 12 out there. I don't want to assert that 13 they compete or don't compete with Google, 14 but I know that there are other exchanges 15 out there.</p> <p>16 Q. Right. Because you have done 17 no analysis of who the competitors are in 18 this market, true?</p> <p>19 MR. RENARD: Objection to form.</p> <p>20 A. I would say that's not true. 21 Sorry, let me go back. Without knowing 22 exactly what you mean by competitors, I 23 don't know how to answer that question. In 24 terms of other exchanges, I have done some 25 analysis of some properties of other</p>	<p>Page 154</p> <p>1 WEINBERG, Ph.D.</p> <p>2 AFTERNON SESSION</p> <p>3 2:00 p.m.</p> <p>4 MATTHEW WEINBERG, Ph.D., 5 resumed.</p> <p>6 THE VIDEOGRAPHER: We are back 7 on the record, 2:00 p.m.</p> <p>8 CONTINUED EXAMINATION</p> <p>9 BY MS. PATRICK:</p> <p>10 Q. Did you have a chance to talk 11 to your counsel at the lunch break, 12 Professor?</p> <p>13 A. Yes.</p> <p>14 Q. Did you discuss your testimony?</p> <p>15 A. Yes.</p> <p>16 Q. Did they suggest anything that 17 you testified to that needed to be 18 corrected in the last hour that we covered 19 or in the morning session?</p> <p>20 A. I do not have anything that I 21 need to correct from the morning session or 22 the last hour.</p> <p>23 Q. Okay. A couple of cleanup 24 questions. Can you tell the jury how long 25 was your meeting with Mr. Andrien?</p>
<p>1 WEINBERG, Ph.D.</p> <p>2 exchanges.</p> <p>3 Q. Tell me the exchanges that you 4 are aware of.</p> <p>5 A. There is at least OpenX and 6 Rubicon. I believe that Sovrn is also an 7 exchange.</p> <p>8 [REDACTED]</p> <p>9 [REDACTED]</p> <p>10 [REDACTED]</p> <p>11 [REDACTED]</p> <p>12 [REDACTED]</p> <p>13 [REDACTED]</p> <p>14 There 15 may be others that I'm aware of but I don't 16 know that I could list them off the top of 17 my head.</p> <p>18 MS. PATRICK: Okay. We can 19 take our lunch break.</p> <p>20 THE VIDEOGRAPHER: We are off 21 the record, 1:18 p.m.</p> <p>22 (Luncheon recess: 1:18 p.m.)</p> <p>23</p> <p>24</p> <p>25</p>	<p>Page 155</p> <p>1 WEINBERG, Ph.D.</p> <p>2 A. I don't recall exactly how 3 long, but it was very brief, maybe five 4 minutes.</p> <p>5 Q. So the only -- when Mr. Andrien 6 says he had an interview with you, it was a 7 five-minute conversation?</p> <p>8 A. I don't know exactly what he is 9 saying, but I had a five-minute 10 conversation with him.</p> <p>11 Q. Okay. Have you spoken to 12 Dr. Doremus?</p> <p>13 A. I don't believe so.</p> <p>14 Q. And other than that five-minute 15 conversation with Mr. Andrien, you never 16 talked to him otherwise?</p> <p>17 A. No, I don't believe so.</p> <p>18 Q. Okay. All right. Let's talk 19 now about the specific conduct that you 20 have discussed in your report. I want to 21 start with reserve price optimization. Are 22 you with me?</p> <p>23 A. Yes.</p> <p>24 Q. In simple terms, do you agree 25 that reserve price optimization changed the</p>

<p style="text-align: right;">Page 158</p> <p>1 WEINBERG, Ph.D. 2 minimum cost per mille floor that 3 publishers established for their ad space? 4 A. In simple terms, I would agree 5 with that. 6 Q. And so that we're 7 communicating, part of what Google was 8 doing through reserve price optimization 9 was it was, in effect, saying to publishers 10 you are selling your space too cheaply, you 11 need to price it higher? 12 MR. RENARD: Objection to form. 13 A. I don't want to offer an 14 opinion on what Google was trying to 15 convey. From a technical perspective, RPO 16 increased the CPM floors that publishers 17 had set. 18 Q. Because they were previously 19 too low compared to what the market was 20 willing to bear? 21 MR. RENARD: Objection to form. 22 A. I, again, don't want to opine 23 too much on Google's motivation, but that 24 is a reasonable inference to draw, that 25 Google considered them too low and</p>	<p style="text-align: right;">Page 160</p> <p>1 WEINBERG, Ph.D. 2 mille, and, like I said, I'm not sure 3 whether that is thousands or millions. 4 Q. So you don't even know what 5 units are represented by that measurement? 6 A. No, I know that the units 7 represented are impressions. 8 Q. But you don't know how many of 9 them are in that label, right? 10 A. I don't know exactly how many 11 mille refers to. 12 Q. Okay. Now, but we can agree 13 that the minimum cost per mille is what 14 would otherwise be called the reserve 15 price? 16 MR. RENARD: Objection to form. 17 A. I believe I have seen min CPM 18 used in a couple of different contexts. It 19 seems to me an appropriate use to equate 20 reserve price with min CPM floor set by the 21 publisher. 22 Q. I just want to be sure I heard 23 you correctly. Did you say it seems to me 24 an appropriate use to equate reserve price 25 with min CPM floor by the publisher or did</p>
<p style="text-align: right;">Page 159</p> <p>1 WEINBERG, Ph.D. 2 therefore RPO raised them. 3 Q. And it's a benefit to 4 publishers if they avoid selling their 5 space too cheaply, right? 6 MR. RENARD: Objection to form. 7 A. It is a benefit to publishers 8 to sell their space at a higher price than 9 to sell the same space at a lower price, I 10 agree with that. 11 Q. Now, the minimum CPM, what is 12 that? 13 A. CPM stands for cost per mille, 14 or mille, I'm not positive how to pronounce 15 it. 16 Q. Cost per thousand? 17 A. Again, I'm not fluent in my -- 18 actually, I have no idea if that is Latin. 19 I would assume it means thousand or 20 million. 21 Q. Well, do you know whether the 22 units in which reserve prices were 23 expressed on AdX was in cost per thousands 24 or cost per millions? 25 A. I know it was in cost per</p>	<p style="text-align: right;">Page 161</p> <p>1 WEINBERG, Ph.D. 2 you say it was inappropriate? 3 A. An. 4 Q. An? 5 A. a-n. 6 Q. Okay. So simpler, you don't 7 have any difficulty with saying for 8 purposes of this discussion min CPM floor 9 is the reserve price that the publisher 10 sets for their ad space? 11 MR. RENARD: Objection to form. 12 A. I don't object to using that 13 term. I do want to note that I have seen 14 it used in a different context, and so it 15 may be -- it may be a confusing term to use 16 in hindsight. 17 Q. Okay. But when we talk about 18 reserve price optimization, the reserve 19 price that is being optimized in that 20 conduct is the min CPM floor, right? 21 A. The min CPM floor set by the 22 publisher, yes. 23 Q. Is what is optimized in reserve 24 price optimization? 25 A. Again, at a simple level, yes.</p>

<p style="text-align: right;">Page 162</p> <p>1 WEINBERG, Ph.D.</p> <p>2 Q. Okay. Now, in paragraph 273 of 3 your original report, you said that there 4 was a period during which RPO was 5 concealed. Do you see that?</p> <p>6 A. Yes.</p> <p>7 Q. And you went on to say "It is 8 also my opinion that even after RPO was 9 revealed, publishers might set suboptimal 10 reserves on any impression for which RPO is 11 a possibility."</p> <p>12 Do you see that?</p> <p>13 A. Yes.</p> <p>14 Q. And so at least in your initial 15 report you contemplated a period when RPO 16 was concealed and a period after which it 17 had been revealed, right?</p> <p>18 A. That is a correct assessment of 19 my opening report. And for context I will 20 just note that in my rebuttal report I no 21 longer take that opinion.</p> <p>22 Q. Right. And, Professor 23 Weinberg, it will help if you let me ask my 24 questions and not anticipate the next, 25 okay? So my next question was to direct</p>	<p style="text-align: right;">Page 164</p> <p>1 WEINBERG, Ph.D.</p> <p>2 you did between your original report and 3 your rebuttal was you went back and looked 4 at some additional documents, is that 5 right, to assess the disclosure of RPO?</p> <p>6 A. Yes, that's correct.</p> <p>7 Q. So then let's look at your list 8 of documents from your rebuttal report, 9 which is Exhibit 2, and I want to direct 10 your attention to Appendix B.</p> <p>11 So in Materials Relied On, if 12 you will look there at the first page of 13 that, you've got it right there, yup, and I 14 will just direct your attention, items 68 15 and 69 are documents numbered 16 GOOG-AT-MDL-C-35251 and 35252. Do you see 17 that?</p> <p>18 A. Yes, and both of those have 19 four zeros preceding.</p> <p>20 Q. Yes. But this document that I 21 have just handed you, which is Exhibit -- 22 Weinberg Exhibit 5 is Google exhibit, the 23 same prefix, 35250. Do you see that?</p> <p>24 A. Yes, I see that.</p> <p>25 Q. So this document, Exhibit 5, is</p>
<p style="text-align: right;">Page 163</p> <p>1 WEINBERG, Ph.D.</p> <p>2 you to paragraph 122 of your rebuttal 3 report.</p> <p>4 A. I can quickly clarify, I wasn't 5 trying to anticipate your question, I was 6 trying to add context to a question I had 7 given in case you weren't going there.</p> <p>8 Q. Your counsel can ask you all 9 the context questions he wants. I would 10 like to try to keep you focused on my 11 questions, all right?</p> <p>12 And so to pick up on my point, 13 beginning at Section E, you revise your 14 opinion about whether RPO was disclosed to 15 state the view in paragraph 127 that the 16 disclosure was insufficient. Do you see 17 that?</p> <p>18 A. Yes, I see in paragraph 127 19 where I state that Google's purported 20 disclosure of RPO was insufficient.</p> <p>21 (Weinberg Exhibit 5 marked for 22 identification.)</p> <p>23 Q. So let me ask you first to look 24 at Weinberg Exhibit 5. Now, I think you 25 told me this morning that one of the things</p>	<p style="text-align: right;">Page 165</p> <p>1 WEINBERG, Ph.D.</p> <p>2 not a document that is listed as one that 3 you either relied on or considered, is it?</p> <p>4 A. The text looks very similar to 5 something I had seen and certainly cited. 6 I agree that the Bates number is not in the 7 list of materials relied upon, but the text 8 looks very familiar.</p> <p>9 Q. All right. So this text looks 10 familiar but you can't say for certain that 11 you actually considered or relied on this 12 document; is that fair?</p> <p>13 A. So I certainly cite a sentence 14 that is included in this document. I will 15 quickly repeat that sentence. It is in my 16 report, page 33, paragraph 5. I say 17 "Regardless of whether any adjustments are 18 made, the winning buyer will never be 19 charged more than the bid it submits." And 20 that same sentence appears in the document 21 you handed me. So it is possible that this 22 is a copy of a document I relied on. It is 23 also possible that it has overlapping 24 information, but I agree that the Bates 25 number on this document is not in my</p>

<p style="text-align: right;">Page 166</p> <p>1 WEINBERG, Ph.D. 2 materials relied upon. 3 Q. So you can't tell us 4 definitively that you actually considered 5 this document, it is possible you did, you 6 just don't know; is that fair? 7 A. I'm saying I have definitely 8 considered at least some contents of this 9 document. From the looks of it, it looks 10 like content I remember seeing, but because 11 the Bates number does not match and I do 12 not have the document associated with all 13 the Bates that I do cite, I do not know 14 whether this is exactly the same document 15 or a similar one. 16 Q. Okay. So let's go through this 17 document, and I just want to ask you a 18 couple of questions about it. 19 In the first bullet point 20 there, so this is the Ad Exchange Auction 21 Model and how it selects ads that will 22 appear on your pages and it determines how 23 much you will earn from those ads, that's 24 the beginning preface of this, right? 25 MR. RENARD: Objection to the</p>	<p style="text-align: right;">Page 168</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to form. 3 A. Again, I have seen a document 4 with overlapping content to this, perhaps 5 the same document. That other document was 6 a public post that I believe the Milgrom 7 report cited as a disclosure of some sort. 8 Q. Okay. And so while it talks 9 about the Ad Exchange auction being 10 designed to ensure publishers earn the most 11 revenue for their ad space, it also talks 12 about how buyers' bids are treated, right? 13 A. Yes. For example, it has the 14 claim the winning buyer will never be 15 charged more than the bid it submits. 16 Q. Right. It also says that 17 "DoubleClick Ad Exchange determines the 18 winning bidder based on the highest net bid 19 submitted." 20 Do you see that? 21 A. Yes, I see that too. 22 Q. And it goes on to say that 23 "Such net bid reflects any adjustments Ad 24 Exchange may, at its discretion, have made 25 to the bid submitted by the buyer for the</p>
<p style="text-align: right;">Page 167</p> <p>1 WEINBERG, Ph.D. 2 form. 3 A. The title of the document is Ad 4 Exchange Auction Model, and the first 5 sentence before the bullets does say 6 "DoubleClick Ad Exchange uses the following 7 auction model in the open auction and 8 private auction," and then proceeds to the 9 bullets. 10 Q. It also says "The ad auction is 11 designed to ensure that you are earning the 12 most possible revenue for your ad space," 13 right? 14 A. It does also say the ad auction 15 is designed to ensure you are earning the 16 most possible revenue for your ad space, I 17 agree. 18 Q. So this is a document directed 19 to publishers that sell ad space, right? 20 MR. RENARD: Objection to form. 21 A. I would assume so based on the 22 sentence you just read. 23 Q. But it is -- you have seen 24 documents like this and you know they are 25 public blog posts by Google, right?</p>	<p style="text-align: right;">Page 169</p> <p>1 WEINBERG, Ph.D. 2 purpose of optimizing the auction." 3 Do you see that? 4 A. Yes, I see that sentence too. 5 Q. So that says to buyers we will 6 change your bid to optimize the auction, 7 right? 8 MR. RENARD: Objection to form. 9 A. I think it says to buyers 10 exactly what it states. 11 Q. One of which is we may adjust 12 your bid to optimize the auction, true? 13 A. Yes, that is implied by this 14 sentence. 15 Q. And it then continues and says 16 "Regardless of whether any such adjustments 17 are made, the winning buyer will never be 18 charged more than the bid it submits," 19 right? 20 A. I agree that that sentence is 21 written and I discuss that particular 22 sentence significantly in both my reports. 23 Q. Okay. And then going down to 24 the third sub-bullet that starts "The 25 Google DoubleClick Ad Exchange may run."</p>

<p style="text-align: right;">Page 170</p> <p>1 WEINBERG, Ph.D. 2 Do you see that? 3 A. Yes, I do. 4 Q. So the first sentence there 5 says "The Google DoubleClick Ad Exchange 6 may run limited experiments designed to 7 optimize the auction." 8 Have I read that correctly? 9 A. Yes, you have read that 10 sentence correctly. 11 Q. So both publishers and ad 12 buyers are told in that sentence that the 13 Ad Exchange may run experiments designed to 14 optimize the auction. Do you see that? 15 MR. RENARD: Objection to form. 16 A. Assuming this is a 17 public-facing document, then I agree that 18 publishers and advertisers would have 19 access to this document, and I also agree 20 that this document says that Google 21 DoubleClick Ad Exchange may run limited 22 experiments designed to optimize the 23 auction. 24 Q. Okay. And it continues by 25 describing what some of those experiments,</p>	<p style="text-align: right;">Page 172</p> <p>1 WEINBERG, Ph.D. 2 A. Yes, I see that too. 3 Q. The third thing it says is the 4 experiment may include, quote, "modifying 5 the min CPM set by the publisher for an 6 impression or otherwise adjusting the 7 publisher settings." 8 Do you see that? 9 A. Yes, I see that too. 10 Q. And there we are talking about 11 modifying and adjusting the reserve price 12 set by the publisher for the impression, 13 right? 14 MR. RENARD: Objection to form. 15 A. Yes, in the sentence modifying 16 "The min CPM set by the publisher for an 17 impression or otherwise adjusting publisher 18 settings," in that sentence min CPM would 19 refer to the reserve. 20 Q. Okay. And all of that was 21 disclosed by this document, if we're 22 correct that it is a publicly-facing blog 23 post, right? 24 MR. RENARD: Objection to the 25 form.</p>
<p style="text-align: right;">Page 171</p> <p>1 WEINBERG, Ph.D. 2 quote, "may include." Do you see that? 3 A. Yes, that's the next sentence. 4 Q. And the experiments that may be 5 included are, quote, "modifying the 6 standard auction model or mechanics (e.g., 7 a tiered rather than a second price 8 auction)." 9 Do you see that? 10 A. Yes, I see that. 11 Q. So one of the things that this 12 experiment may be is a deviation from a 13 second price auction, true? 14 A. Yes, I agree that this 15 language, by using the phrase "rather" 16 suggests that a tiered auction is not a 17 second price auction. 18 Q. Right. And that in those 19 experiments Google may not actually run a 20 second price auction, right? 21 A. I agree that that is a 22 reasonable interpretation of this sentence. 23 Q. The next thing Google says it 24 may experiment in doing is simulating ad 25 calls and auctions. Do you see that?</p>	<p style="text-align: right;">Page 173</p> <p>1 WEINBERG, Ph.D. 2 A. I agree that all of that 3 content is in this document, and I agree 4 that if this was a public-facing document 5 then participants would have been able to 6 access it if they knew where to access it. 7 Q. And do you know when this 8 document was first published? 9 MR. RENARD: Objection to form. 10 A. This document does not have a 11 date on it, so I do not know when it was 12 first published. 13 Q. But do you agree that if people 14 knew that reserve prices could be changed 15 by experiments and that Google could change 16 the bids submitted by a buyer and they used 17 the Ad Exchange anyway, they accepted those 18 risks? 19 MR. RENARD: Objection to form. 20 A. That sounds like a legal 21 conclusion that I don't have an opinion on. 22 Q. Okay. Well, without regard to 23 accepting those risks, you talked about 24 what people's expectations of the auction 25 were, right, and how bids operate, that's</p>

<p>1 WEINBERG, Ph.D. 2 throughout your report?</p> <p>3 MR. RENARD: Objection to the 4 form.</p> <p>5 A. Yes, I do talk about the 6 expectations of participants for the 7 auction that they are participating in.</p> <p>8 Q. And if participants entered the 9 auction knowing that the bids submitted by 10 a buyer could be changed at Google's 11 discretion, then they were not deceived 12 about that, true?</p> <p>13 MR. RENARD: Objection to form.</p> <p>14 A. I need to unpack that a bit. 15 So if a participant is informed of the 16 sentence "Ad Exchange may, at its 17 discretion, adjust the bids," so if a 18 participant is aware of that, I guess then 19 they are not deceived about that particular 20 fact.</p> <p>21 However, the mere fact that an 22 Ad Exchange is adjusting bids is not 23 necessarily the material information, and 24 so, for example, in my report, I go into 25 extensive detail about the manner in which</p>	<p>Page 174</p> <p>1 WEINBERG, Ph.D. 2 form.</p> <p>3 A. At its discretion is maybe 4 subject to interpretation of surrounding 5 context. Personally I would not interpret 6 this document, the phrase "at its 7 discretion," to imply literally however 8 Google wants.</p> <p>9 For example, Google is stating 10 earlier in the document the ad auction is 11 designed to ensure that you are earning the 12 most possible revenue for your ad space. 13 So at its discretion in a way that is 14 completely counter to that would not be a 15 reasonable interpretation.</p> <p>16 Q. From a buyer's perspective, 17 though, it says the net bid may reflect any 18 adjustments Ad Exchange may, at its 19 discretion, make to the bid the buyer 20 submits, right?</p> <p>21 A. I agree that that is what the 22 sentence says.</p> <p>23 Q. And "at its discretion" does 24 not contemplate any confining parameter, 25 does it?</p>
<p>1 WEINBERG, Ph.D. 2 bids are adjusted or prices are charged or 3 min CPMs are changed, and the precise 4 manner in which that is done is very 5 material. So a participant could be 6 informed or not deceived about some 7 high-level concept while still being 8 deceived about the material details of that 9 concept.</p> <p>10 Q. Okay. To echo your phrase, 11 let's unpack that a bit.</p> <p>12 So, first, we can agree that if 13 a participant is informed of the sentence 14 that "Ad Exchange may, at its discretion, 15 adjust the bids" and is aware of that, then 16 they are not deceived about that particular 17 fact; we agree about that, true?</p> <p>18 A. Yes, we agree that if a 19 participant is aware of a fact then they 20 are not deceived about that fact, and we 21 applied that to the fact AdX may at its 22 discretion adjust bids.</p> <p>23 Q. Right. And at its discretion 24 means what, however it wants, right?</p> <p>25 MR. RENARD: Objection to the</p>	<p>Page 175</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to form.</p> <p>3 A. I would still say that, like 4 with most text, the surrounding context is 5 useful for understanding exactly how 6 someone would interpret it.</p> <p>7 Q. And here the surrounding 8 context says "Regardless of whether any 9 such adjustments are made, the winning 10 buyer will never be charged more than the 11 bid it submits."</p> <p>12 Do you see that?</p> <p>13 MR. RENARD: Objection to form.</p> <p>14 A. I agree that the next sentence 15 is "Regardless of whether such adjustments 16 are made, the winning buyer will never be 17 charged more than the bid it submits."</p> <p>18 Q. But at minimum we can agree 19 that this sentence discloses to anybody 20 that read it that Google was adjusting bids 21 at its discretion, true?</p> <p>22 MR. RENARD: Objection to form.</p> <p>23 A. I agree that the sentence "Such 24 net bid reflects any adjustments Ad 25 Exchange may, at its discretion, have made</p>

<p style="text-align: right;">Page 178</p> <p>1 WEINBERG, Ph.D. 2 to the bid submitted by the buyer for the 3 purpose of optimizing the auction" conveys 4 the information to someone who reads it and 5 understands it that AdX is adjusting bids 6 at its discretion.</p> <p>7 Q. And also conveys the 8 information that AdX is also in these 9 experiments adjusting the reserve prices, 10 true?</p> <p>11 MR. RENARD: Objection to the 12 form.</p> <p>13 A. This particular sentence does 14 not imply adjustments to the reserve. Just 15 because the document is several paragraphs, 16 could you point me to the sentence you have 17 in mind?</p> <p>18 Q. Yes, look at the third 19 sub-bullet. "These experiments may 20 include," skipping ahead, "modifying the 21 min CPM set by the publisher for an 22 impression or otherwise adjusting publisher 23 settings," that's a reference to the 24 reserve price, right?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 180</p> <p>1 WEINBERG, Ph.D. 2 claim, and I repeated it in my rebuttal 3 report. So this document would be 4 deceptive for that reason.</p> <p>5 Q. You just switched to dynamic 6 revenue sharing 2. I'm asking you about 7 reserve price optimization. So someone who 8 reads the "AdX may run limited experiments 9 designed to optimize the auction. These 10 experiments may include modifying the min 11 CPM" would be aware that there are limited 12 auctions on which AdX is modifying the min 13 CPM, that's true, right?</p> <p>14 MR. RENARD: Objection to form.</p> <p>15 A. Sorry, that was a long 16 question. Can you repeat it?</p> <p>17 Q. You just testified earlier in 18 response to my question, I asked you 19 "Therefore, that disclosure conveys 20 information that AdX is also in these 21 experiments adjusting publisher reserve 22 prices, true?"</p> <p>23 And your answer was "Someone 24 who read the sentence 'AdX may run limited 25 experiments designed to optimize the</p>
<p style="text-align: right;">Page 179</p> <p>1 WEINBERG, Ph.D.</p> <p>2 Q. And therefore that disclosure 3 conveys information that AdX is also in 4 these experiments adjusting publisher 5 reserve prices, true?</p> <p>6 MR. RENARD: Objection to form.</p> <p>7 A. Someone who read the sentence 8 "AdX may run limited experiments designed 9 to optimize the auction. These experiments 10 may include modifying the min CPM," would 11 be aware that there are limited auctions on 12 which AdX is modifying the min CPM.</p> <p>13 Q. Okay. And therefore that 14 disclosure is not deceptive as to those 15 experiments, true?</p> <p>16 MR. RENARD: Objection to form.</p> <p>17 A. This particular document is 18 deceptive. In particular, I discuss this 19 at length in my report, the sentence 20 "Regardless of whether any such adjustments 21 are made, the winning buyer will never be 22 charged more than the bid it submits."</p> <p>23 That sentence is false for DRSv2, I stated 24 that in my opening report, and I do not 25 believe any Google experts contested that</p>	<p style="text-align: right;">Page 181</p> <p>1 WEINBERG, Ph.D.</p> <p>2 auction. These experiments may include 3 modifying the min CPM' would be aware that 4 there are limited auctions on which AdX is 5 modifying the min CPM."</p> <p>6 That was your testimony, right?</p> <p>7 A. Yes, that sounds accurate.</p> <p>8 Q. Okay. And as to publishers, 9 therefore, that statement was in no way 10 deceptive, true? Because anybody who read 11 that was aware that there were experiments 12 where the min CPM floor was being changed.</p> <p>13 MR. RENARD: Objection to the 14 form.</p> <p>15 A. I would agree that this 16 sentence is not a deceptive sentence. 17 However, if this is the only disclosure 18 that is made with respect to RPO, I would 19 consider that deceptive because there was 20 much more material information related to 21 RPO.</p> <p>22 But for your specific question, 23 this particular sentence in isolation, I do 24 not -- I do not see a false statement in 25 this sentence. Maybe it is -- by</p>

<p style="text-align: right;">Page 182</p> <p>1 WEINBERG, Ph.D. 2 suggesting that it is limited experiments 3 whereas RPO was more widespread could be 4 misleading.</p> <p>5 Q. All right. So at least at the 6 point where they are conducting experiments 7 and they disclose that one aspect of those 8 experiments is to change bids, that's not 9 deceptive, right?</p> <p>10 MR. RENARD: Objection to the 11 form.</p> <p>12 A. I think there was a broader 13 view on deception that's missing here. For 14 these sentences in isolation, for example, 15 "AdX may run limited experiments designed 16 to optimize the auction. These experiments 17 may include modifying the min CPM," if AdX 18 is indeed only running limited experiments, 19 I agree that that sentence in isolation is 20 not a deceptive sentence.</p> <p>21 Q. Okay.</p> <p>22 A. I still want to clarify, that 23 does not mean all of RPO is not deceptive 24 or no other communications are deceptive. 25 But this sentence in isolation, viewed as</p>	<p style="text-align: right;">Page 184</p> <p>1 WEINBERG, Ph.D. 2 A. I agree that this document 3 states that buyers' bids are being 4 adjusted. As far as adjusting publishers' 5 floors, it does add a qualifier, "run 6 limited experiments," which suggests that 7 they are only experiments and not 8 widespread.</p> <p>9 Q. But as to the experiments where 10 that is running, that's also disclosed, 11 right?</p> <p>12 MR. RENARD: Objection, form.</p> <p>13 A. I agree that the information in 14 here is accurately describing limited 15 experiments that modify the publishers' set 16 reserve. Whether or not that amounts to a 17 transparent disclosure, there is a lot -- 18 there is a lot more context.</p> <p>19 But as far as -- as far as the 20 accuracy of the sentence, I agree that if 21 Google is running limited experiments that 22 modify the publisher reserve, this sentence 23 is accurately describing that that happens.</p> <p>24 Q. And thus not deceptive?</p> <p>25 MR. RENARD: Objection to form.</p>
<p style="text-align: right;">Page 183</p> <p>1 WEINBERG, Ph.D. 2 just a sentence, has not false information 3 in it.</p> <p>4 Q. Right. And, similarly, the 5 sentence viewed as a sentence, "Such net 6 bids reflects any adjustments AdX may make 7 at its discretion to bids submitted by the 8 buyer for purposes of optimizing the 9 auction" is likewise not false information 10 and in isolation is not a deceptive 11 sentence either, true?</p> <p>12 A. I have to add the same caveats, 13 which is if all of Google's adjustments 14 were indeed for the purpose of optimizing 15 the auction, then the sentence in isolation 16 would not be a deceptive sentence. But 17 taking a big-picture view on deception, if 18 this is the only sentence that Google said 19 to describe its deceptive conduct, it omits 20 significant material information.</p> <p>21 Q. Okay. But we do know that at 22 least in this document, two things are 23 disclosed, we are adjusting buyers' bids 24 and we are adjusting publishers' floors, 25 reserve prices, right?</p>	<p style="text-align: right;">Page 185</p> <p>1 WEINBERG, Ph.D. 2 A. Again, in isolation, this 3 sentence would not be deceptive. I, again, 4 say that if this is the only sentence 5 Google is sharing about RPO, that that is 6 not sufficient to convey the material 7 information.</p> <p>8 Q. Okay. So let's look at some 9 other things that Google said. Let me show 10 you Exhibit 6.</p> <p>11 (Weinberg Exhibit 6 marked for 12 identification.)</p> <p>13 Q. I will ask you the same 14 question, sir, let's start with your 15 rebuttal report, Exhibit B, and let me know 16 whether this document appears on your list 17 of materials relied on, please.</p> <p>18 Sir, you are kind of reading 19 ahead. Can I get you to answer my question 20 first?</p> <p>21 A. I can answer that the Bates 22 number of this document is not in the 23 materials relied upon list.</p> <p>24 Q. Okay.</p> <p>25 A. The reason I'm reading it is</p>

<p style="text-align: right;">Page 186</p> <p>1 WEINBERG, Ph.D. 2 because it, again, looks very familiar and 3 looks similar to a document that I did 4 cite, so I'm trying to read it to fully 5 answer your question as to whether I cited 6 it.</p> <p>7 Q. Okay. So we'll go step by 8 step. I promise you I will get there, and 9 if I don't, you can prompt me and say I 10 didn't ask you this and I will ask you, 11 okay?</p> <p>12 So at least as we look at your 13 list of materials considered and relied on, 14 this document marked as Exhibit 6 is not 15 listed there, true?</p> <p>16 A. I agree that the Bates number 17 of this document does not appear in the 18 materials considered list. However, I do 19 want to note that I have not yet finished 20 looking at it to determine whether it is 21 identical to a document I considered under 22 a different Bates.</p> <p>23 Q. Okay. So let's start on the 24 first page, and I will give you all the 25 time to look at it, but let me just kind of</p>	<p style="text-align: right;">Page 188</p> <p>1 WEINBERG, Ph.D. 2 title is Smarter Optimizations to Support a 3 Healthier Programmatic Market.</p> <p>4 Q. And one of the headings is 5 Greater Accuracy with Optimized Pricing in 6 the Open Auction. Do you see that?</p> <p>7 A. I agree that one of the 8 headings is Greater Accuracy with Optimized 9 Pricing in the Open Auction.</p> <p>10 Q. Okay. So let's look at the 11 first page -- first paragraph at the top of 12 page 3. So in May of 2016 Google says "In 13 addition to helping publishers maximize 14 revenue from private auctions, we have been 15 experimenting with optimized pricing to 16 help publishers set price floors in the 17 Open Auction that more closely reflect the 18 value of their inventory."</p> <p>19 Do you see that?</p> <p>20 A. Yes, I see that that is the 21 first paragraph at the top of page 3.</p> <p>22 Q. So Google is saying there we 23 have been experimenting with how to 24 optimize pricing, right?</p> <p>25 A. Yes, I agree.</p>
<p style="text-align: right;">Page 187</p> <p>1 WEINBERG, Ph.D. 2 direct your attention. The date on the 3 front of this document is May 12th, 2016. 4 Do you see that?</p> <p>5 A. Yes, I see that.</p> <p>6 Q. Okay.</p> <p>7 A. Sorry, that was the end of my 8 answer.</p> <p>9 Q. Because I saw you rummaging in 10 your document I thought you needed to do 11 something. Are you ready to go?</p> <p>12 A. Sorry, I'm ready to go.</p> <p>13 Q. So if we turn to the second 14 page, there is a heading there that says 15 Greater Accuracy with Optimized Pricing in 16 the Open Auction. Do you see that?</p> <p>17 A. Yes, I see that at the bottom 18 of page 2.</p> <p>19 Q. Okay. And this is in a 20 document that bears the date May 12th, 21 2016, the title of which is Smarter 22 Optimizations to Support a Healthier 23 Programmatic Market, right?</p> <p>24 A. Yes, I agree that this document 25 is dated May 12th, 2016. I agree that the</p>	<p style="text-align: right;">Page 189</p> <p>1 WEINBERG, Ph.D.</p> <p>2 Q. And in the next paragraph it 3 explains that they have observed more than 4 a 50 percent price gap between bid and 5 closing prices in many cases, right?</p> <p>6 A. I agree that is stated in the 7 second sentence of the second paragraph.</p> <p>8 Q. And "Publishers see this gap," 9 it says, "as a revenue opportunity and try 10 to close the gap by applying manually 11 calculated price floors."</p> <p>12 Do you see that?</p> <p>13 A. I see that sentence too, yes.</p> <p>14 Q. And Google says "This is 15 difficult to do well and can lead to lost 16 revenue or to complex implementation such 17 as offering the same query repeatedly at 18 different price floors that can increase 19 user latency and hurt advertiser's 20 performance. We think there is a better 21 way."</p> <p>22 Have I read that correctly?</p> <p>23 A. Yes, you have read that 24 correctly.</p> <p>25 Q. And you agreed with me earlier</p>

<p style="text-align: right;">Page 190</p> <p>1 WEINBERG, Ph.D. 2 that it is not in publisher's interest to 3 sell their ad space for less than what 4 would have cleared the market at a higher 5 price, right? 6 MR. RENARD: Objection to form. 7 A. To repeat what I said, I agree 8 that it is better for a publisher to sell 9 their impression at a high price than to 10 sell that same impression at a lower price. 11 Q. Okay. And so then Google says 12 "Optimized pricing in the Open Auction uses 13 historical data to automate the 14 post-auction analysis and updating of floor 15 prices that publishers already do." 16 Do you see that? 17 A. Yes, I agree. 18 Q. And you agree that publishers 19 did do that, right? 20 MR. RENARD: Objection to the 21 form. 22 Q. Or maybe you don't know. Do 23 you know what publishers did to value their 24 inventory, sir? 25 A. I agree that this document is</p>	<p style="text-align: right;">Page 192</p> <p>1 WEINBERG, Ph.D. 2 A. Yes, I see that too. 3 Q. What is an audience-based 4 floor? 5 MR. RENARD: Objection to form. 6 A. I would need more information 7 to know what that means. 8 Q. Okay. It goes on to say "and 9 as we have always done, if there is a floor 10 applied to an impression, whether publisher 11 or algorithmically set, we share it with 12 buyers in our bid request." 13 Do you see that? 14 A. Yes, I see that too. 15 Q. So when AdX was putting an 16 impression or a display space out for bid, 17 it did so with a disclosure of what the 18 floor price demanded was, right? 19 MR. RENARD: Objection to form. 20 A. I agree that the sentence is 21 stating that whenever AdX ran an auction, 22 AdX would disclose the price floor for that 23 auction. 24 Q. And then it says "In our 25 experiments to date we have applied</p>
<p style="text-align: right;">Page 191</p> <p>1 WEINBERG, Ph.D. 2 asserting that publishers already update 3 floor prices. I agree that that's what 4 this document is asserting. 5 Q. But you don't know whether 6 publishers do that or not, do you? 7 A. I know that prior to RPO, if a 8 publisher wanted to update their price 9 floors, they would do so manually. That is 10 also stated earlier in this document. I 11 don't know that publishers chose to update 12 them manually. I just know that if they 13 updated it, they did it manually. 14 Q. Okay. And so Google is saying 15 our optimized pricing, quote, "takes it a 16 step further." 17 Do you see that? 18 A. Yes, I see that. 19 Q. It goes on to say "Not only 20 does our technology use signals like ad 21 unit and device, it also calculates 22 audience-based floors so publishers can 23 fully benefit from building valuable 24 audiences." 25 Do you see that?</p>	<p style="text-align: right;">Page 193</p> <p>1 WEINBERG, Ph.D. 2 optimized pricing to about 15 percent of 3 transactions, creating over 5 percent lift 4 in revenue for publishers using the Open 5 Auction." 6 Do you see that? 7 A. Yes, I see that too. 8 Q. So they disclosed the exact 9 number of transactions that the experiments 10 had been applied in as of May 2016, right? 11 MR. RENARD: Objection to form. 12 A. I agree that if Google applied 13 optimized pricing to 15 percent of 14 transactions and created over 5 percent 15 lift in revenue for publishers, that this 16 sentence is stating it publicly. 17 Q. Right. And you did not go back 18 when you saw some version of this document 19 and look at the actual transactions to see 20 whether Google was accurate in saying that 21 at this point, as of May of 2016, it had 22 applied optimized pricing only in about 15 23 percent of transactions? 24 A. That's correct. I'm not 25 contesting the accuracy of this claim, I'm</p>

<p>1 WEINBERG, Ph.D. 2 just trying to be precise with the 3 questions. 4 Q. So you're not here telling the 5 jury that as of the date of this 6 disclosure, Google was not telling the 7 truth about the fact that it had applied 8 optimized pricing to about 15 percent of 9 transactions? 10 A. That is correct, I am not 11 contesting the claim we have applied 12 optimized pricing to about 15 percent of 13 transactions, which was made on May 12th. 14 Q. And Google says in the next 15 sentence "As we expand our experiments with 16 optimized pricing, we will monitor its 17 performance to ensure advertisers continue 18 to get great ROI." 19 Do you see that? 20 A. Yes, I see that too. 21 Q. And so as any reader of this 22 blog post or article from Google would know 23 both that Google had been applying 24 optimized pricing to 15 percent of 25 transactions and that it continued -- it</p>	<p>Page 194</p> <p>1 WEINBERG, Ph.D. 2 and understood this disclosure from the 3 first paragraph could have concluded that 4 optimized pricing helped publishers set 5 price floors. 6 Q. And, finally, you agree that 7 anybody who read this disclosure would have 8 been informed that Google intended to 9 expand its experiments with optimized 10 pricing, right? 11 MR. RENARD: Objection to form. 12 A. Yes, I also agree that someone 13 who read and understood this document, 14 including the last paragraph on page 3, 15 would have understood that Google intends 16 to expand its experiments with optimized 17 pricing. 18 Q. All right. Now, let's look at 19 another document. This is one that is on 20 your list, 35251. Do you see that? 21 A. While you are doing that, can 22 I -- you noted before that if I determine 23 that this was a document I had likely seen 24 before, I should let you know. It seems to 25 be -- it seems to be cited in footnote 422</p>
<p>1 WEINBERG, Ph.D. 2 intended to expand those experiments. Do 3 you see that? 4 MR. RENARD: Objection to the 5 form of the question. 6 Q. I will break it down. Any 7 reader who bothered to read this could have 8 seen that in May of 2016 Google was 9 disclosing that it had applied optimized 10 pricing to 15 percent of transactions, 11 right? 12 MR. RENARD: Objection to form. 13 A. I agree that if someone were to 14 have read and understood the first sentence 15 of the last paragraph they would have 16 concluded that Google applied optimized 17 pricing to about 15 percent of 18 transactions. 19 Q. And if they read the first 20 paragraph at the top of that page they 21 would have understood that optimized 22 pricing was used to help publishers set 23 their price floors, right? 24 MR. RENARD: Objection to form. 25 A. I agree that someone who read</p>	<p>Page 195</p> <p>1 WEINBERG, Ph.D. 2 on page 152 of my opening report. The 3 reason I believe that is because the date 4 matches and because the author matches. 5 Q. Okay. 6 A. But I do not have the web page 7 in front of me to confirm for sure. 8 Q. Okay. 9 (Weinberg Exhibit 7 marked for 10 identification.) 11 Q. Now, this document you did see, 12 right? 13 A. Yes, it looks like this one 14 is -- the Bates number is in my Appendix B. 15 Q. So I'm going to represent to 16 you and ask you to accept my representation 17 that the metadata on this document, 35251, 18 shows that it was published in 2015, okay? 19 A. Okay. 20 Q. Can you accept that? All 21 right, so we are going forward in time. 22 Now, this is another one of these 23 explanations of the Ad Exchange model. Do 24 you see that? 25 A. I see that it is titled Ad</p>

50 (Pages 194 - 197)

<p style="text-align: right;">Page 198</p> <p>1 WEINBERG, Ph.D. 2 Exchange Auction Model, and I see that the 3 text that follows is similar to Exhibit 5, 4 yes.</p> <p>5 MR. RENARD: Can I just ask you 6 when you said we are going forward in 7 time, just what you meant?</p> <p>8 MS. PATRICK: It is backward, 9 it is 2015, isn't it?</p> <p>10 MR. RENARD: Well, in relation 11 to what?</p> <p>12 MS. PATRICK: So the first 13 document --</p> <p>14 MR. RENARD: I don't remember 15 us talking about metadata on 5 is the 16 reason I'm --</p> <p>17 MS. PATRICK: We didn't. But 18 if you need it, it is 2014.</p> <p>19 MR. RENARD: Okay. I just want 20 to make sure I understood the context.</p> <p>21 MS. PATRICK: So just so you 22 have it, 5 is 2014, 6 is May 2016, 7 is 23 in 2015. Right, Michael?</p> <p>24 MR. DAVIS: Yes.</p> <p>25 MR. RENARD: Thank you. And</p>	<p style="text-align: right;">Page 200</p> <p>1 WEINBERG, Ph.D. 2 I will represent to you is from 2015, has 3 the same sentence in it, "The net bid 4 reflects any adjustments Ad Exchange may, 5 at its discretion, have made to the bids 6 submitted by the buyer."</p> <p>7 Do you see that?</p> <p>8 A. Yes.</p> <p>9 Q. And it has the same sentence 10 "Regardless of whether any adjustments are 11 made, the winning buyer will never be 12 charged more than the bid it submits."</p> <p>13 Do you see that?</p> <p>14 A. Yes, I see that too.</p> <p>15 Q. All right. So now I want to 16 direct your attention to the second bullet, 17 which says "The Ad Exchange auction closing 18 price is determined as the greater of the 19 second highest net bid in the Ad Exchange 20 auction or the reserve price applied to 21 that impression."</p> <p>22 Do you see that?</p> <p>23 A. Yes, I see that too.</p> <p>24 Q. And that's new language, right?</p> <p>25 A. I don't think that sentence is</p>
<p style="text-align: right;">Page 199</p> <p>1 WEINBERG, Ph.D. 2 obviously we're not in a position right 3 now to confirm, but if that's your 4 representation, then Dr. Weinberg will 5 follow it.</p> <p>6 Q. All right. So directing your 7 attention to the first bullet point, do you 8 see that?</p> <p>9 A. Yes.</p> <p>10 Q. And this is a document that you 11 listed as one that you actually saw, do you 12 remember that, 3251 -- 35251?</p> <p>13 A. Yes. If you want me to say 14 where in my report, I would need some time, 15 but I agree that it is in the materials 16 relied upon, and that also helps explain 17 why I recognized Exhibit 5.</p> <p>18 Q. But the text of the two 19 documents is different, you see that, 20 right? I'm not asking you to do a 21 line-by-line presentation, but one of them 22 is longer, right?</p> <p>23 A. Yes, Exhibit 7 is longer, so 24 there must be some change.</p> <p>25 Q. All right. So Exhibit 7, which</p>	<p style="text-align: right;">Page 201</p> <p>1 WEINBERG, Ph.D. 2 new.</p> <p>3 Q. The next sentence is new 4 though, right, "In some cases"?</p> <p>5 A. Yes, the next sentence is new.</p> <p>6 Q. So let's talk about the new 7 sentence. The new sentence says "In some 8 cases the auction may close at a price 9 lower than the reserve price applied due to 10 auction optimizations."</p> <p>11 Do you see that?</p> <p>12 A. Yes, I see that.</p> <p>13 Q. And it continues and says 14 "Sellers are paid the Ad Exchange closing 15 price net of Google's revenue share but 16 will receive, subject to the terms 17 governing their use of the Ad Exchange, no 18 less than the min CPM applied to the 19 auction."</p> <p>20 Do you see that?</p> <p>21 A. Yes. Can I also quickly ask, 22 are you representing that that sentence is 23 the only difference between Exhibit 5 and 24 7?</p> <p>25 Q. I did not say that.</p>

<p>1 WEINBERG, Ph.D. 2 A. Okay. Can I ask -- 3 Q. Because I go step by step, 4 that's why. 5 A. Got it, okay. I guess I was 6 trying to ask whether I can put away 7 Exhibit 5. It sounds like you are saying 8 no, not yet. 9 Q. I wouldn't. 10 A. Okay. 11 Q. All right. So let's talk first 12 about that sentence, "In some cases the 13 auction may close at a price lower than the 14 reserve price applied due to auction 15 optimizations." 16 Do you see that? 17 A. Yes, I agree with that. 18 Q. So it says that the auction 19 optimization can affect the closing price, 20 right? 21 A. I agree that it is saying the 22 auction optimization can affect the closing 23 price. 24 Q. But it also says that "Sellers 25 will receive, subject to the terms</p>	<p>Page 202</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to form. 3 A. I agree that it is possible to 4 conclude from the information there, after 5 the logic I applied, that on such auctions 6 Google must have lowered its revenue share, 7 yes. 8 Q. And that's there in the black 9 and white, right? 10 MR. RENARD: Objection to form. 11 A. I agree that this sentence in 12 black text on white page describes that 13 Google may lower its revenue share. 14 I can maybe add some quick 15 context that I know in my rebuttal report I 16 claim that one of these sentences is 17 deceptive, and I can clarify that I'm not 18 saying it is deceptive because Google did 19 not disclose that it might adjust its 20 revenue share, that I claimed it is 21 deceptive for the reason in my report. 22 Q. Okay. So just to be clear, 23 this blog post is disclosing that, A, 24 Google may change the bid submitted by the 25 buyer for purpose of optimizing the</p>
<p>1 WEINBERG, Ph.D. 2 governing their use of the Ad Exchange, no 3 less than the min CPM applied to the 4 auction." 5 Do you see that? 6 A. Yes, I see that too. 7 Q. So how, other than by adjusting 8 Google's fee for the transaction, would 9 that be possible? 10 MR. RENARD: Objection to form. 11 A. In the event that the auction 12 closes at a price lower than the reserve 13 price applied and sellers are paid at least 14 their min CPM, I agree that can only happen 15 by adjusting Google's revenue share. 16 Q. Right. And in fact it says 17 "Sellers are paid the Ad Exchange closing 18 price net of Google's revenue share but 19 will receive no less than the min CPM 20 applied to the auction," right? 21 A. Yes, I agree that's what it 22 says. 23 Q. So Google is saying there it is 24 in some cases cutting its revenue share in 25 order to make the auction work, right?</p>	<p>Page 203</p> <p>1 WEINBERG, Ph.D. 2 auction, right? 3 MR. RENARD: Objection to the 4 form. 5 A. I agree that those words are 6 contained in this document, yes. 7 Q. Okay. And it is also 8 disclosing that the auction may close at a 9 price lower than the reserve price due to 10 auction optimizations, but that the seller 11 will not receive less than its floor price 12 because Google is netting some part of its 13 revenue share to make that happen, right? 14 MR. RENARD: Objection to form. 15 A. Again, I agree that that 16 information is contained in this document. 17 Q. Okay. So if both of those are 18 disclosed, what part of what you call DRS 19 version 1 is not disclosed in this 20 document? 21 A. So it does not disclose that 22 when a buyer wins with a bid below the 23 price floor that they will pay their bid. 24 That is not disclosed anywhere in this 25 document and there is no way to plausibly</p>

<p style="text-align: right;">Page 206</p> <p>1 WEINBERG, Ph.D. 2 conclude that just from the information in 3 this document.</p> <p>4 Q. It's your contention that the 5 sentence "Regardless of whether any 6 adjustments are made, the winning buyer 7 will never be charged more than the bid it 8 submits" does not disclose that the bidder 9 may have to pay the bid it submits?</p> <p>10 A. It is my opinion that this 11 sentence does not disclose that the bidder 12 will certainly pay the bid it submits.</p> <p>13 Q. All right. But it certainly 14 does disclose that the winning buyer will 15 never be charged more than the bid it 16 submits, right?</p> <p>17 A. I agree that this sentence 18 states that the winning buyer will never be 19 charged more than the bid it submits.</p> <p>20 Q. Right. And in any auction a 21 buyer understands that when they submit a 22 bid they are bound to perform it if it is 23 accepted, right?</p> <p>24 MR. RENARD: Objection to form.</p> <p>25 A. I disagree with that.</p>	<p style="text-align: right;">Page 208</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Counsel, we have 3 been going about an hour and 10, so 4 whenever you get to a convenient breaking 5 point.</p> <p>6 Q. And you would agree that in a 7 second price auction, the winning bidder 8 pays the higher of the second highest bid 9 or the reserve, right?</p> <p>10 A. Yes, in a second price auction 11 that is clean and unmodified, the winning 12 bidder would pay the highest of the second 13 highest bid in the reserve.</p> <p>14 Q. And if an auction clears at a 15 bid below the reserve, then the reserve was 16 necessarily higher than the second highest 17 bid in that scenario, right?</p> <p>18 A. If the auction clears below the 19 reserve, it's not a second price auction 20 then.</p> <p>21 Q. And in that circumstance the 22 seller -- let me read you the question 23 again. In an auction that is a second 24 price auction, there will be a reserve set 25 by the seller, right, and then there will</p>
<p style="text-align: right;">Page 207</p> <p>1 WEINBERG, Ph.D.</p> <p>2 Q. Okay. So a buyer can submit a 3 bid not intending to have to honor it, is 4 that your contention?</p> <p>5 MR. RENARD: Objection to form.</p> <p>6 A. No, that's not how I understood 7 your question.</p> <p>8 Q. So we can agree if I submit a 9 bid in this auction of \$10 for 1,000 10 impressions, it is no surprise to me if I 11 am called on to pay that bid?</p> <p>12 MR. RENARD: Objection to form.</p> <p>13 A. I would need more information 14 to answer that question. There is missing 15 information about the auction format. 16 There is missing information about the bids 17 of other bidders. There is missing 18 information about the reserve price.</p> <p>19 Q. But what is disclosed here is 20 that whatever my \$10 bid was that I 21 submitted, AdX has discretion to change it 22 and I will never be charged more than the 23 bid I submitted, right?</p> <p>24 A. I agree that is what this 25 document is stating.</p>	<p style="text-align: right;">Page 209</p> <p>1 WEINBERG, Ph.D. 2 be bids by bidders, true?</p> <p>3 A. In a second price auction with 4 reserve, there is a -- what you said is 5 correct for a second price auction with 6 reserve, yes.</p> <p>7 Q. Thank you. And in a 8 circumstance where the auction clears at a 9 bid below the reserve, that means the 10 reserve was, A, necessarily higher than any 11 bid, right?</p> <p>12 MR. RENARD: Objection to form.</p> <p>13 A. Let me -- there is an incorrect 14 assumption in the question. A second price 15 auction with a reserve of 10 cannot clear 16 below a value of 10.</p> <p>17 Q. I gotcha. But if dynamic 18 revenue sharing is operating where Google 19 is cutting its fee to make up the 20 difference, right, in that scenario my 21 statement would be correct, right?</p> <p>22 MR. RENARD: Objection to form.</p> <p>23 A. In the scenario where Google is 24 running dynamic revenue sharing, which, to 25 be clear, is not a second price auction,</p>

<p style="text-align: right;">Page 210</p> <p>1 WEINBERG, Ph.D. 2 and -- maybe let me rephrase it in a 3 helpful way. 4 Forget about second price 5 auction. In DRS, if an auction under DRS 6 clears at a price below the reserve, then 7 yes, the reserve was higher than the 8 winning bid, that is correct. 9 Q. And in that circumstance the 10 seller still receives their reserve price, 11 true? 12 A. So that is false under TDRS. 13 It could be false under DRSSv2. It is true 14 under DRSSv1. 15 Q. So at least as of 2015 what 16 Google is saying is in a circumstance under 17 DRS version 1, dynamic revenue sharing 18 version 1, if the auction clears below the 19 reserve price, Google will make up the 20 difference out of its revenue share and the 21 seller will receive its floor price, right? 22 MR. RENARD: Objection to form. 23 A. This document is describing 24 that when an auction clears below the 25 reserve price that the publisher will be</p>	<p style="text-align: right;">Page 212</p> <p>1 WEINBERG, Ph.D. 2 Q. But advertisers at least know 3 that Google is adjusting the prices of bids 4 to optimize the auction as of the date of 5 this post, right? 6 MR. RENARD: Objection to form. 7 A. I don't know what advertisers 8 know, but this post contains information 9 that says AdX is optimizing bids. 10 Q. Right. Changing them, right? 11 A. Adjusting, yes, that's what it 12 says. 13 Q. Adjusting is changing, right? 14 A. Yes, sorry, I was just looking 15 for the precise phrase to make sure. 16 MS. PATRICK: All right, we can 17 take a break and we will go on to the 18 next document. 19 THE VIDEOGRAPHER: Off the 20 record 3:15 p.m. 21 (Recess taken.) 22 THE VIDEOGRAPHER: We are back 23 on the record 3:33 p.m. 24 BY MS. PATRICK: 25 Q. Professor Weinberg, did you</p>
<p style="text-align: right;">Page 211</p> <p>1 WEINBERG, Ph.D. 2 paid at least the min CPM, and this 3 document is also representing that the 4 bidder will not pay more than their bid, 5 and you asked me to confirm that those two 6 things together mean that Google is 7 adjusting its revenue share, so those are 8 all true. 9 Q. Okay. So all of that about DRS 10 version 1 is disclosed in this document, 11 Exhibit 7, right? 12 MR. RENARD: Objection to form. 13 A. Those three things are true. 14 But backtracking, you asked me what do I 15 consider to not be disclosed, and what I 16 said was not disclosed is that when the 17 impression clears below the reserve, the 18 winning bidder always pays their bid 19 exactly. That is not disclosed in this 20 document and that is one of the reasons why 21 I found Google's conduct with respect to 22 DRSSv1 deceptive, because if advertisers 23 were aware that below the reserve they are 24 always charged their bid, then advertisers 25 would have bid shaded in that region.</p>	<p style="text-align: right;">Page 213</p> <p>1 WEINBERG, Ph.D. 2 have a chance to talk with your counsel 3 during the break? 4 A. Yes, I did. 5 Q. And did you discuss your 6 testimony with them, sir? 7 A. Yes, I did. 8 Q. And what suggestions, if any, 9 did they make for changes you might make to 10 your testimony? 11 MR. RENARD: I'll object to 12 that as worded and instruct you not to 13 answer. But if in response to 14 Ms. Patrick's questions you have 15 anything to add or change, feel free to 16 do so. 17 A. I do not have anything to add 18 or change. 19 Q. So you stand by your testimony 20 up to now? 21 A. Yes, I stand by the testimony 22 up to now. 23 Q. All right. Weinberg Exhibit 8. 24 (Weinberg Exhibit 8 marked for 25 identification.)</p>

<p>1 WEINBERG, Ph.D.</p> <p>2 Q. This is another document that 3 is on your list of documents that you 4 relied on. So I think we can say with a 5 fair degree of confidence that you have 6 seen and read this document. Take a moment 7 and confirm it for me.</p> <p>8 (Witness perusing document.)</p> <p>9 Q. Have you read it, sir?</p> <p>10 A. Yes, I just finished.</p> <p>11 Q. And you can confirm that this 12 is a document that you have read, correct?</p> <p>13 A. I am just quickly confirming 14 that the Bates matches exactly. Yes, it is 15 exactly this document.</p> <p>16 Q. All right. And in several 17 places in your report you have described 18 dynamic revenue sharing as, quote, 19 "exceptionally misleading"; is that right?</p> <p>20 Look at your opening report, paragraph 128.</p> <p>21 A. Sorry, did you say paragraph 22 128?</p> <p>23 Q. I did, but I might be wrong. 24 Maybe it is page. But let me check. Yes, 25 it is page 128, I apologize, Professor.</p>	<p>Page 214</p> <p>1 WEINBERG, Ph.D.</p> <p>2 dynamic revenue sharing, DRS, your position 3 that it is misleading to advertisers and 4 publishers concerns in significant part the 5 concept of the debt created to Google by 6 virtue of the operation of dynamic revenue 7 sharing, right?</p> <p>8 A. I agree that one significant 9 aspect that contributes to my opinion that 10 DRS is deceptive is the mechanism of debt.</p> <p>11 Q. And it is deceptive in your 12 view to both ad buyers and ad sellers, 13 publishers?</p> <p>14 A. Yes, the concept of debt in my 15 opinion is deceptive both towards 16 advertisers and towards publishers.</p> <p>17 Q. And that's because the concept 18 of debt in your view was not disclosed to 19 either of them, right?</p> <p>20 MR. RENARD: Objection to form.</p> <p>21 A. That is one element of why I 22 consider it to be deceptive.</p> <p>23 Q. Namely that the concept of debt 24 was not disclosed?</p> <p>25 A. Yes, that the concept of the</p>
<p>1 WEINBERG, Ph.D.</p> <p>2 A. That's okay.</p> <p>3 Q. So look at page 128, heading G.</p> <p>4 A. Yes, I agree heading G says 5 Some Aspects of DRS are Exceptionally 6 Misleading.</p> <p>7 Q. And one of the aspects, what 8 you go on to say is "Much of my analysis 9 below concerns the concept of debt to 10 mislead both advertisers and publishers 11 regarding how much they are paying or paid 12 out."</p> <p>13 Have I read that sentence 14 correctly?</p> <p>15 A. Yes, you have read that 16 sentence correctly.</p> <p>17 Q. And so it is your position as 18 you sit here today that the concept of debt 19 was misleading to both ad buyers and 20 publisher ad sellers as it was affected by 21 DRS, true?</p> <p>22 A. Can you repeat it? I just want 23 to get the question precise.</p> <p>24 Q. Yeah, it was a bad question.</p> <p>25 My point is as it pertains to</p>	<p>Page 215</p> <p>1 WEINBERG, Ph.D.</p> <p>2 debt was not transparently disclosed forms 3 one element of why I consider it to be a 4 deceptive conduct.</p> <p>5 Q. All right. So you added a 6 modifier there, "not transparently 7 disclosed." You will agree that the 8 existence of debt was disclosed, true?</p> <p>9 MR. RENARD: Objection to the 10 statement preceding the question.</p> <p>11 A. No, I would disagree with that 12 statement.</p> <p>13 Q. All right. Well, let's examine 14 that.</p> <p>15 A. Can I clarify quickly? The 16 reason I chose to say "transparently 17 disclosed" is because I have a precise 18 definition for that in my report. 19 "Disclosed" is a vaguer term, and I would 20 still say no for disclosed, but I would 21 prefer to stick to a concrete term with a 22 concrete definition.</p> <p>23 Q. I understand that might be your 24 preference, sir, but I've got to live in 25 the law, where I live, and so I'm not aware</p>

<p>1 WEINBERG, Ph.D. 2 of any statute that uses the word 3 "transparent," and so I'm going to ask 4 about what is disclosed, okay? 5 So with that preface, is it 6 your position that the concept of debt as 7 it pertained to DRS was not disclosed? 8 MR. RENARD: I'll object to the 9 preface. 10 A. That is my opinion. I will 11 elaborate that this document does not 12 disclose the concept of debt, and I do 13 not -- I recall this document I believe 14 being cited in the Milgrom report as 15 evidence for the concept of debt being 16 disclosed. Without having the Milgrom 17 report in front of me, it is possible I'm 18 misremembering. But I do not recall seeing 19 any evidence in any of Google's experts' 20 reports or any other documents that would 21 lead me to believe that the concept of debt 22 was disclosed. 23 Q. All right. Let's examine that. 24 Directing your attention to Exhibit 8, 25 which you have before you, sir, I will --</p>	<p>Page 218</p> <p>1 WEINBERG, Ph.D. 2 Q. And as it pertains to that, 3 Professor, you remind me, I need to ask 4 this question, how many transactions have 5 you determined were executed because of the 6 effect of DRS version 1, dynamic revenue 7 sharing version 1? 8 MR. RENARD: Objection to form. 9 A. It was not my assignment to 10 determine quantitatively how many 11 transactions cleared as a result of DRSp1. 12 Q. All right. So the answer to my 13 question is you have not determined by any 14 method how many or whether any transactions 15 were cleared as a result of dynamic revenue 16 sharing version 1, true? 17 A. Someone who wished to determine 18 how many transactions cleared because of 19 dynamic revenue sharing version 1 could use 20 my opinions as a basis, but I do not myself 21 do any calculations of that form. 22 Q. And the same question as to 23 dynamic revenue sharing version 2, again, 24 you cannot tell the jury of your own 25 knowledge how many transactions were</p>
<p>1 WEINBERG, Ph.D. 2 this is another one of those disclosures 3 about the Ad Exchange auction model. So 4 the metadata would tell us that this is 5 June of 2016. I will ask you to accept my 6 representation about that. All right? Are 7 you with me? 8 A. I will accept your 9 representation. 10 Q. All right. And I want to go 11 down to, so we see in the first bullet 12 point the same disclosure of the fact that 13 "Ad Exchange may, at its discretion, make 14 adjustments to bids." 15 Do you see that? 16 A. Yes, I agree. 17 Q. And you see the same disclosure 18 that "Regardless of whether any adjustments 19 are made, the winning buyer will never be 20 charged more than the bid it submits." 21 Do you see that? 22 A. I see that sentence, and I 23 would like to note that this sentence is 24 false for DRSp2, and I have stated that in 25 both my opening and my rebuttal reports.</p>	<p>Page 219</p> <p>1 WEINBERG, Ph.D. 2 actually executed because of dynamic 3 revenue sharing version 2, true? 4 A. So that was also not part of my 5 assignment. Someone who wished to 6 determine how many transactions cleared 7 because of dynamic revenue sharing V2 could 8 use opinions in my report as a basis, but I 9 do not myself calculate the number of 10 transactions. 11 Q. And are you aware, sir, of 12 whether anyone on behalf of the states has 13 determined how many transactions were 14 actually executed because of dynamic 15 revenue sharing version 1? 16 MR. RENARD: Objection to form. 17 A. I don't recall whether any 18 other experts on behalf of the plaintiff 19 states are doing that calculation. 20 Q. All right. And same question 21 as to dynamic revenue sharing version 2, 22 DRSp2. 23 MR. RENARD: Objection as to 24 form. 25 A. I also don't recall whether any</p>

<p style="text-align: right;">Page 222</p> <p>1 WEINBERG, Ph.D. 2 experts on behalf of the plaintiff states 3 are calculating the number of transactions 4 that would not have cleared but for DRSv2.</p> <p>5 Q. And other than your five-minute 6 conversation with Mr. Andrien, have you 7 spoken directly with any of the other 8 experts for the plaintiff states?</p> <p>9 A. No, I have not.</p> <p>10 Q. Okay. So let's go back to 11 Exhibit 8. Let's look at the third bullet 12 point. "To optimize the auction, Google 13 may choose to close an auction at a price 14 lower than the reserve price that would 15 otherwise have been applied. In such cases 16 the winning buyer may pay a price below the 17 reserve and therefore receive a discount on 18 its bid."</p> <p>19 Do you see that?</p> <p>20 A. Yes, I see that.</p> <p>21 Q. And the next sentence says "A 22 buyer that has received discounts on its 23 bid(s) may face higher reserve prices in 24 subsequent transactions to offset such 25 discounts."</p>	<p style="text-align: right;">Page 224</p> <p>1 WEINBERG, Ph.D. 2 for, compensate, to form an offset in, to 3 become marked by offset."</p> <p>4 Q. All right. And the Oxford 5 Language Dictionary says an offset is "a 6 consideration or amount that diminishes or 7 balances the effect of a contrary one."</p> <p>8 Do you see that?</p> <p>9 A. Yes, I see that.</p> <p>10 Q. And, similarly, the next 11 definition, which is the verb, "counteract 12 something by having an opposing force or an 13 effect. The deficit has been more than 14 offset by capital inflows."</p> <p>15 Do you see that?</p> <p>16 A. Yes, you said that correctly.</p> <p>17 Q. And so using all of those 18 definitions, counterbalance, to place over, 19 against, or to diminish or balance the 20 effect of a contrary one, at minimum, that 21 language is disclosing, you would agree, 22 that the discount is being offset by higher 23 prices elsewhere, right?</p> <p>24 MR. RENARD: Objection to form.</p> <p>25 A. This sentence contains the</p>
<p style="text-align: right;">Page 223</p> <p>1 WEINBERG, Ph.D. 2 Do you see that?</p> <p>3 A. Yes, I see that sentence too.</p> <p>4 Q. What does the word "offset" 5 mean?</p> <p>6 MR. RENARD: Objection to form.</p> <p>7 A. If you would let me use the 8 dictionary, I will give you a dictionary 9 definition.</p> <p>10 Q. Well, I happen to have one. 11 (Weinberg Exhibit 9 marked for 12 identification.)</p> <p>13 Q. Here is Exhibit 9. When you 14 use Google to ask for the definition of 15 "offset," it gives you the Oxford Languages 16 Dictionary, do you see that, Exhibit 9?</p> <p>17 A. As I see that, as long as we 18 have Merriam-Webster, may I also look in 19 Merriam-Webster?</p> <p>20 Q. Of course. It is right there. 21 Help yourself. What do Merriam-Webster 22 say?</p> <p>23 A. I will read the entire one. It 24 says "A. to place over, against something, 25 balance. B. to serve as a counterbalance</p>	<p style="text-align: right;">Page 225</p> <p>1 WEINBERG, Ph.D. 2 information for someone who reads and 3 understands it that states the lower price 4 you received on this one is causing you to 5 pay a higher price later, for someone who 6 reads and understands it.</p> <p>7 Q. Right. And, similarly, we see 8 the same thing in the disclosure for 9 sellers in the next bullet point, right?</p> <p>10 MR. RENARD: Objection to form.</p> <p>11 A. In the subsequent bullet point, 12 for someone who read and understood this, 13 they could conclude that they would face a 14 lower revenue share in subsequent 15 transactions to make up for the higher 16 revenue share of a previous one.</p> <p>17 Q. And you don't know how many ad 18 buyers or ad sellers read this disclosure, 19 do you?</p> <p>20 MR. RENARD: Objection to form.</p> <p>21 A. I do not know how many ad 22 buyers or ad sellers read this document.</p> <p>23 Q. Nor do you understand, nor do 24 you have any basis to determine, what, for 25 example, a sophisticated purchaser might</p>

<p style="text-align: right;">Page 226</p> <p>1 WEINBERG, Ph.D. 2 have understood from that language, right? 3 MR. RENARD: Objection to form. 4 A. Sorry, could you repeat the 5 question? 6 Q. Sure. You are not a 7 mind-reader, are you, sir? 8 A. No, I'm not a mind-reader. 9 Q. Right. And so as it pertains 10 to what you have called a sophisticated 11 purchaser, you can't tell the jury from 12 your own knowledge how a sophisticated 13 purchaser might have received, read, or 14 understood this disclosure, true? 15 A. I do not have a basis by which 16 I would assert that a sophisticated buyer 17 or seller would or would not get certain 18 information from this document. 19 Q. So when you are talking about 20 conduct being deceptive, you are not able 21 to testify that this disclosure would be 22 deceptive to any particular ad buyer or ad 23 seller, true? 24 MR. RENARD: Objection to form. 25 A. I think my previous answer may</p>	<p style="text-align: right;">Page 228</p> <p>1 WEINBERG, Ph.D. 2 understood this document, the document does 3 state that a buyer that has received 4 discounts on its bids may face higher 5 reserve prices in subsequent transactions. 6 Q. To make up for those discounts? 7 A. To offset such discounts, yes. 8 Q. And, similarly, for sellers, 9 their revenue share might be reduced to 10 offset prior earnings in excess of the 11 contracted revenue share, right? 12 MR. RENARD: Objection to form. 13 A. For a seller who read and 14 understood this document, the document 15 states that the revenue share may be 16 reduced to offset the prior earnings, yes. 17 Q. And just to tie it out, 18 Professor, you cannot testify of your own 19 knowledge or opinion how many sellers would 20 have, could have, or did read and 21 understand this document? 22 MR. RENARD: Objection to form. 23 A. It is not within my assignment 24 to determine how many sellers read and 25 understood this document, and I am indeed</p>
<p style="text-align: right;">Page 227</p> <p>1 WEINBERG, Ph.D. 2 have been a bit too vague. What I meant to 3 say was for the information that we have 4 just discussed, I could conclude from 5 reading this document, for that information 6 I don't have a basis by which to say a 7 particular sophisticated participant could 8 have reached the same conclusions. I do 9 have a basis by which to say this document 10 does not contain sufficient information for 11 me, an auction theory expert, to conclude 12 the concept of debt, and therefore I 13 consider that a sufficient basis to 14 conclude that even a sophisticated player 15 would also not be able to deduce the 16 concept of debt from this document. 17 Q. All right. But what you can 18 deduce in plain English, and you don't have 19 to be a sophisticated auction theorist to 20 do that, is if you get a bid -- if you get 21 a discount on bid number one, you may face 22 higher reserve prices in subsequent 23 transactions to make up for it, right? 24 MR. RENARD: Objection to form. 25 A. For someone who has read and</p>	<p style="text-align: right;">Page 229</p> <p>1 WEINBERG, Ph.D. 2 unable to do that. 3 Q. All right. And it is also not 4 within your assignment to determine how 5 many buyers read and understood this 6 document and therefore you are not able to 7 do that either, right? 8 A. Yes, that is correct. 9 Q. And therefore not able to say 10 whether particular ad buyers or sellers 11 were or were not deceived by this document, 12 true? 13 MR. RENARD: Objection to form. 14 A. I will answer the question 15 followed by a clarification. That is 16 correct that it is not within my assignment 17 to determine how many advertisers were 18 deceived by this document. One thing it 19 could mean to be deceived by this document 20 is to believe the sentence "Regardless of 21 whether any adjustments are made, the 22 winning buyer will never be charged more 23 than the bid it submits." That would be 24 one example of a way an advertiser could be 25 deceived by this document, and it is not</p>

<p style="text-align: right;">Page 230</p> <p>1 WEINBERG, Ph.D. 2 within my assignment to determine how many 3 advertisers believed that statement. 4 Q. Right. And in fact, as you sit 5 here today, you have not determined whether 6 any ad buyer believed that their -- I'm 7 sorry, I lost my train of thought. 8 You said "One thing it could 9 mean to be deceived by this document is to 10 believe the sentence 'Regardless of whether 11 any adjustments are made, the winning buyer 12 will never be charged more than the bid it 13 submits.' That's an example of a way an 14 advertiser could be deceived by this 15 document, but it is not within my 16 assignment to determine how many 17 advertisers believed that statement," and 18 therefore you cannot say as you sit here 19 today that even one advertiser was deceived 20 by that statement, true? 21 MR. RENARD: Objection to form. 22 A. It is not within my assignment 23 to determine how many advertisers, 24 including whether that number was one, 25 more, or zero, believe that statement.</p>	<p style="text-align: right;">Page 232</p> <p>1 WEINBERG, Ph.D. 2 am not aware that that is a false 3 statement, and so in isolation it is hard 4 for me to call that sentence deceiving. 5 However, to the best of my 6 knowledge, this is the only sentence that I 7 have seen in any document, including those 8 cited in the Milgrom, Baye and Wiggins 9 report that attempts to describe the 10 concept of debt to advertisers. 11 So for an advertiser who only 12 sees this sentence, I would say that 13 advertiser is deceived about DRSv2. My 14 basis for making that claim is I as an 15 expert auction theorist would not deduce 16 the concept of debt just from this 17 sentence. 18 Q. Right. But as we sit here, 19 Doctor, you have not determined whether any 20 any advertiser or publisher only saw this 21 one document, true? 22 A. I do not know what documents 23 advertisers or publishers see. What I do 24 know is in my opening report I clearly 25 stated that Google would have needed to</p>
<p style="text-align: right;">Page 231</p> <p>1 WEINBERG, Ph.D. 2 Q. Right. And as you sit here 3 today you cannot say that even one was 4 deceived, true? 5 MR. RENARD: Objection to form. 6 A. It was not within my 7 assignment -- it was not within my 8 assignment to determine whether any 9 advertisers believed the statement, and as 10 a result it is also not within my 11 assignment to determine whether even one 12 believed that statement. 13 Q. And, similarly, not within your 14 assignment to believe -- to determine 15 whether even one buyer or even one seller 16 was deceived by the statement about 17 offsets? 18 A. I think this is getting back 19 into nuance about whether a statement in 20 isolation that withholds material 21 information is deceiving in isolation. So, 22 for example, the sentence "A buyer that has 23 received discounts on its bids may face 24 higher reserve prices in subsequent 25 transactions to offset such discounts," I</p>	<p style="text-align: right;">Page 233</p> <p>1 WEINBERG, Ph.D. 2 disclose a somewhat precise description of 3 the debt concept in order to transparently 4 disclose it, and this is I believe the most 5 relevant document, the Milgrom report, 6 cited in response, and so I therefore have 7 reason to believe that there is no better 8 document that Google is aware of that an 9 advertiser or publisher could have seen. 10 MS. PATRICK: Objection, 11 nonresponsive. 12 Q. I'm going to ask you my 13 question again. It was actually simpler. 14 As we sit here, you have not 15 determined whether any advertiser or 16 publisher only saw this one document, true? 17 A. The sentence is true, it is not 18 within my assignment to determine whether 19 advertisers or publishers have seen more 20 than this document. I would still like to 21 add the context that the basis for my 22 opinions regarding deception are that 23 significantly more information would be 24 needed than this document not to be 25 deceived about DRSv2. In my opening report</p>

<p>1 WEINBERG, Ph.D. 2 I clearly stated this, and in the Milgrom 3 rebuttal report, this seems to be the most 4 informative document that could be found 5 within Google in response.</p> <p>6 MS. PATRICK: I object as 7 nonresponsive to everything after the 8 first sentence of your answer, sir.</p> <p>9 Q. And then my last question is 10 and therefore you cannot identify for the 11 jury even one buyer who was deceived by the 12 statement "A buyer that has received 13 discounts on its bids may face higher 14 reserve prices in subsequent transactions 15 to offset such discounts"?</p> <p>16 MR. RENARD: Objection to form. 17 A. I think there is an implication 18 in that statement that I find the sentence 19 "A buyer that has received discounts on its 20 bids may face higher reserve prices in 21 subsequent transactions to offset such 22 discounts" deceiving in isolation, that 23 indication was false. I find that sentence 24 insufficient and to withhold material 25 information.</p>	<p>Page 234</p> <p>1 WEINBERG, Ph.D. 2 insufficient to disclose the material 3 information for the concept of debt, and 4 therefore I, as an expert auction theorist, 5 could not conclude the concept of debt just 6 from this sentence, and therefore I do not 7 expect someone else to be able to conclude 8 so.</p> <p>9 MS. PATRICK: I object as 10 nonresponsive to everything after "What 11 I am asserting."</p> <p>12 Q. Same question, you understand 13 the statement to be true that a "seller's 14 revenue share may then be reduced to offset 15 the prior earnings in excess of the 16 contracted revenue share, but the seller 17 will always receive at least its contracted 18 revenue share across all its ad 19 transactions in a given month," true?</p> <p>20 A. The "In subsequent transactions 21 the seller's revenue share may then be 22 reduced to offset the prior earnings in 23 excess of the contracted revenue share," 24 that is true with respect to my 25 understanding of DRSv2 and TDRS. For the</p>
<p>1 WEINBERG, Ph.D. 2 Q. Okay. But that sentence is, 3 you have agreed, literally true, right, as 4 you understand how DRS version 2 operated? 5 You just told me it is not a false 6 statement. 7 A. Yes, I am not contesting 8 whether that statement is true or false as 9 it relates to DRSv2. I understand that 10 statement to be true. 11 Q. Okay. So you understand that 12 statement to be true, and you are not here 13 telling this jury that you can identify 14 even one buyer that was deceived by that 15 true statement, right? 16 A. I will answer the question and 17 provide context again. A true statement in 18 isolation, I don't see how a true statement 19 in isolation could be deceptive, and 20 therefore I don't see how I would find 21 evidence that a buyer was deceived by a 22 true statement in isolation absent any 23 other context. 24 What I am asserting, sorry, 25 what I am opining is that this sentence is</p>	<p>Page 235</p> <p>1 WEINBERG, Ph.D. 2 second half of the sentence, I believe that 3 is true for DRSv2 and that is a nuanced 4 question for TDRS that I don't recall 5 whether I addressed in my report. 6 Q. But at least as to the 7 statements that you believe are true, you 8 understand that a seller, sorry, at least 9 as to the portions of the statement that 10 you acknowledge are true, namely that in 11 subsequent transactions the seller's 12 revenue share may then be reduced to offset 13 the prior earnings in excess of the 14 contracted revenue share, you are not able 15 to identify a single seller that was 16 deceived by that true statement, right? 17 A. So for a true statement in 18 isolation, I don't know how someone would 19 be deceived by a true statement in 20 isolation with no further context. It is 21 my opinion that this sentence is 22 insufficient and withholds material 23 information about DRSv2 and TDRS and that I 24 as an auction theorist would not be able to 25 conclude material information about the</p>

<p>1 WEINBERG, Ph.D. 2 concept of debt from just this text. 3 MS. PATRICK: I object as 4 nonresponsive. 5 Q. You keep saying that I as an 6 auction theorist would not be able to 7 discern debt from the use of the term 8 "offset." But you are neither an 9 advertiser nor a publisher ad seller, true? 10 MR. RENARD: Objection to form. 11 A. I am neither an advertiser nor 12 a publisher for part one or for part two. 13 For part one, to clarify, what I am stating 14 is that the sentences, or this document in 15 its entirety, is insufficient for me to 16 conclude the concept of debt as I now know 17 it from the documents I have reviewed for 18 this case. 19 Q. Right. But you have no way of 20 knowing what an ad buyer or seller 21 experienced in the industry would have 22 understood from that disclosure, right? 23 MR. RENARD: Objection to form. 24 Q. Because you have never been an 25 ad buyer or an ad seller?</p>	<p>Page 238</p> <p>1 WEINBERG, Ph.D. 2 A. Yeah, I'm happy to clarify that 3 I don't think the use of the word "offset" 4 is misleading. I agree that "offset" 5 implies counteracting or opposing or 6 counterbalancing. 7 What I am stating is that debt 8 is a very precise mechanism and I needed to 9 understand the actual pseudocode used to 10 describe the concept of debt. That took me 11 several hours to understand exactly what 12 was going on. And just knowing that there 13 was a counteracting or opposing force is 14 not sufficient for me to draw those 15 conclusions. 16 Q. For you as an auction theorist 17 to draw those conclusions, right? 18 A. Yes, I am an auction theorist. 19 Q. So just to wrap this up, you 20 can't point to any individual ad buyer or 21 ad seller who was deceived by those true 22 statements, right? 23 MR. RENARD: Objection to form. 24 A. It was not part of my 25 assignment to understand which advertisers</p>
<p>1 WEINBERG, Ph.D. 2 MR. RENARD: Same objection. 3 A. I do not know whether the word 4 "offset" means something special to 5 advertisers and publishers that it doesn't 6 mean to me, because I am not an advertiser 7 or a publisher. 8 Q. And you certainly would agree 9 that if you see a term in a disclosure that 10 you don't understand, it would be useful to 11 inquire as to what it means, right? 12 MR. RENARD: Objection to form. 13 A. If I were to read a document 14 and I thought that document were relevant 15 to my business, I personally would try to 16 understand that. 17 Q. And we've seen that if you had 18 used Google to Google "offset," the 19 definition as set out in Exhibit 9 makes 20 reference to offsetting a debt, right, 21 counterbalancing a financial obligation? 22 MR. RENARD: Objection to form. 23 A. Sorry, maybe I can -- 24 Q. Exhibit 9 is right there, sir. 25 That's what I've asked you about.</p>	<p>Page 239</p> <p>1 WEINBERG, Ph.D. 2 and which publishers were deceived by 3 different conducts of Google. In 4 particular, it was not part of my 5 assignment to determine whether any, even 6 one advertiser or publisher, were deceived 7 by this document. 8 Q. And therefore you have not 9 determined that even one advertiser or 10 publisher was deceived by this document or 11 by DRS, right? 12 MR. RENARD: Objection to form. 13 A. Because it was not part of my 14 assignment to determine, I did not 15 determine whether even one advertiser or 16 publisher believed the false statements in 17 this document, nor whether they were able 18 to understand more than I as an auction 19 theorist was capable of understanding. 20 MS. PATRICK: Objection, 21 nonresponsive. 22 Q. Let me ask you the question a 23 slightly different way. 24 You have not determined whether 25 even one advertiser or publisher was</p>

<p style="text-align: right;">Page 242</p> <p>1 WEINBERG, Ph.D. 2 deceived by this document about dynamic 3 revenue sharing, true? 4 A. If you could help me understand 5 how I'm not answering the question. 6 Q. I'm asking you whether you know 7 a particular ad buyer or ad seller that you 8 can name for me so the jury knows there is 9 one who was actually deceived by this 10 document. That's my question. 11 MR. RENARD: Objection to the 12 form. 13 A. I will repeat my answer. If 14 you tell me which part of the answer is not 15 clear, I will try again. 16 Q. Can you name one, sir? 17 A. I would like to finish my 18 answer to your previous question. 19 This document does not contain 20 sufficient information for me as an auction 21 theorist to understand the concept of debt, 22 and therefore I, as an auction theorist, 23 would be deceived by Google's conduct with 24 respect to DRS. Therefore, I believe that 25 any advertiser that does not employ -- I</p>	<p style="text-align: right;">Page 244</p> <p>1 WEINBERG, Ph.D. 2 assignment, I cannot identify by name any 3 publisher or advertiser that I am confident 4 did not understand this document better 5 than I do. 6 Q. Or was deceived by it? 7 A. Noting that they would need to 8 understand the document better than I do in 9 order to not be deceived by it. 10 Q. So the answer to my question is 11 you cannot tell the jury any individual ad 12 buyer or publisher who was deceived by this 13 document, true? 14 A. I believe I am answering your 15 question with the appropriate amount of 16 nuance. Because it was not part of my 17 assignment, I cannot identify a single 18 advertiser or publisher who did not 19 understand this document better than I do, 20 and therefore was not deceived. 21 I think, what I said is true, 22 but I think if that does not answer your 23 question I can try again. 24 Q. There is truth in the world and 25 there are ad buyers in the system, right?</p>
<p style="text-align: right;">Page 243</p> <p>1 WEINBERG, Ph.D. 2 would expect advertisers or publishers with 3 less expertise in auction theory than me to 4 be deceived. 5 If you could let me know which 6 part of that doesn't answer your question, 7 I can try to change it. 8 Q. Yes. Can you identify any 9 specific ad buyer who was in fact deceived 10 by the true statements in this document, 11 Weinberg Exhibit 8? 12 MR. RENARD: Objection to form. 13 A. Maybe I can say it was not part 14 of my assignment to identify specific 15 advertisers or publishers who were 16 deceived, therefore I cannot identify a 17 particular advertiser or publisher who I am 18 certain has less auction theory expertise 19 or ability to understand this document than 20 I do. 21 Q. And therefore you cannot tell 22 the jury that you are -- that you can 23 identify even one who actually was deceived 24 by name? 25 A. Because it was not part of my</p>	<p style="text-align: right;">Page 245</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to the 3 question. 4 A. I agree that there is truth in 5 the world and that there are ad buyers in 6 the ad buying ecosystem. 7 Q. And we can agree that it is 8 part of the truth here that you did not 9 identify any specific ad buyer who was in 10 fact deceived by anything Google did, true? 11 MR. RENARD: Objection to form. 12 A. How about this: Because it was 13 not part of my assignment, I cannot 14 identify even a single advertiser or 15 publisher who was deceived by this 16 document, noting that any advertiser or 17 publisher who does not understand this 18 document better than I do would have been 19 deceived by this document. 20 Q. That's your opinion? 21 A. Yes, that is my opinion. 22 Q. But you don't actually know 23 what the standards and practices or 24 understandings of the advertising industry 25 are, right?</p>

<p style="text-align: right;">Page 246</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to the 3 form. 4 A. Sorry, can you just repeat the 5 question? 6 Q. Sure. You don't know what ad 7 buyers and ad sellers understand from their 8 common parlance in their industry from the 9 term "offset," do you? 10 MR. RENARD: Objection to form. 11 A. That is correct. I do not know 12 what ad buyers or publishers would 13 understand the term "offset" to mean. 14 Q. And you can agree that if they 15 don't understand the term "offset" they 16 should ask a question, right? 17 MR. RENARD: Objection to form. 18 A. It is not part of my assignment 19 to determine what an advertiser or 20 publisher should do. 21 Q. Or what they in fact 22 understood, right? 23 MR. RENARD: Objection to the 24 form. 25 A. It was also not part of my</p>	<p style="text-align: right;">Page 248</p> <p>1 WEINBERG, Ph.D. 2 document. So if I look at your rebuttal 3 report, Materials Relied Upon, sir, the 4 documents numbered GOOG-AT-MDL-C, none of 5 these are listed there, none of these pages 6 are listed there. 7 A. I understand that, but there 8 were two documents earlier today that had a 9 Bates number that was not included where I 10 believe I had seen them. If you are 11 comfortable with my answer that the first 12 page doesn't look similar, then leaving it 13 at that -- 14 Q. So it is possible this is a 15 document you have not seen before? 16 A. It is possible this is a 17 document I have not seen before, yes. 18 Q. So let me pace you through this 19 document in the interest of time. If you 20 will get to the first page. So this is an 21 archive of releases for publishers and Ad 22 Exchange sellers. It is a web archive of 23 what has been put out to the public, okay? 24 And it starts at Q4 2016. Do you see that? 25 MR. RENARD: Objection to the</p>
<p style="text-align: right;">Page 247</p> <p>1 WEINBERG, Ph.D. 2 assignment to understand what an advertiser 3 or publisher in fact understood. 4 Q. All right. Let's look at our 5 next document. 6 (Weinberg Exhibit 10 marked for 7 identification.) 8 Q. This is Weinberg Exhibit 10, 9 sir. Does this document look familiar to 10 you? 11 (Witness perusing document.) 12 Q. Professor, in the interest of 13 time, I'm just asking you at the moment if 14 this document looks familiar to you. I'm 15 not asking you about something specific 16 yet. 17 A. The document is a lot of pages. 18 I'm comfortable saying that the first page 19 does not look familiar, but there are ten 20 pages and it is possible that a later page 21 will look familiar. I was trying to be 22 thorough with your question. 23 Q. Okay. Well, I will represent 24 to you, but I could be wrong, let me just 25 look here, I don't think you have seen this</p>	<p style="text-align: right;">Page 249</p> <p>1 WEINBERG, Ph.D. 2 preface to the question. 3 Q. I understand. I'm just 4 orienting you. You see the fourth quarter 5 2016, sir? 6 A. Yes, I see that it says Q4 2016 7 on the first page. 8 Q. So if you will go to the Bates 9 page that ends in 74, you will see Q3 2016? 10 A. On the Bates page that ends in 11 74 I see that it ends Q3 2016. 12 Q. All right. And if you go to 13 the page that ends in 78, you will see Q2 14 2016. Do you see that? 15 A. Yes, I see on the page that 16 ends in 78 it says Q2 2016. 17 Q. All right. And then if you 18 turn to the next page that ends in 79 you 19 see there June 13th Change History Update. 20 Do you see that? 21 A. Yes, on the page ending in 79, 22 I see at the top it says June 13th Change 23 History Update. 24 Q. And in the second -- in the 25 second headline there under Ad Exchange,</p>

<p style="text-align: right;">Page 250</p> <p>1 WEINBERG, Ph.D. 2 there are -- there is a bullet, two bullet 3 points, right? 4 A. Yes, I see that there are two 5 bullet points. 6 Q. And the second bullet point 7 says "As part of our ongoing effort to 8 provide smarter optimizations and maximize 9 revenue, we may increase or decrease 10 revenue share per query." 11 Do you see that? 12 A. Yes, I see that. 13 Q. So that is Google saying we may 14 change our fee in order to provide smarter 15 optimizations and maximize revenue, right? 16 MR. RENARD: Objection to the 17 form of the question. 18 A. Taking at face value that this 19 is a Google written document, I agree that 20 the authors of this document are stating in 21 the document that they are increasing and 22 decreasing revenue share per query. 23 Q. Increasing and decreasing 24 Google's fees in order to provide smarter 25 optimizations and maximize revenue, right?</p>	<p style="text-align: right;">Page 252</p> <p>1 WEINBERG, Ph.D. 2 the advertisers, one is the publishers. 3 This describes an opt-out for publishers. 4 And while I have not cited this document 5 directly, I am confident that my rebuttal 6 report acknowledges that publishers could 7 opt out of DRSv2. I believe my opening 8 report also acknowledges this. And in my 9 rebuttal report I note on page 37, 119-5, 10 so this is at the top of page 37, I wrote 11 "Google did allow publishers to opt out of 12 DRSv2," and I don't know actually if this 13 is the same document I cited or maybe I 14 cited a different announcement or an 15 internal e-mail. I don't recall exactly 16 what I cited, but there was something cited 17 in 136, so I am aware of that. But I 18 follow "but given that publishers were 19 misled to believe they would always be paid 20 at least their price floor under DRSv2, 21 publishers could not make a fully-informed 22 decision on whether to opt out of DRSv2." 23 Sorry, one more sentence. 24 "Google's imperfect opt-out does not remedy 25 that deceptive conduct." And I would say</p>
<p style="text-align: right;">Page 251</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to form. 3 A. This document is describing 4 increasing or decreasing revenue share per 5 query for the purpose of smarter 6 optimizations and maximizing revenue. I 7 will take at face value that it is authored 8 by Google, and therefore the revenue share 9 are Google's fees. 10 Q. And then it goes on to say "If 11 you would prefer to apply your contracted 12 revenue share on every query, use the new 13 Ad Exchange user interface admin control to 14 exclude all sites you monetize through your 15 account from revenue share based 16 optimizations." 17 Do you see that? 18 A. Yes, I see that. 19 Q. So people could opt out of that 20 revenue share optimization if they wanted 21 to at least as of June 13th, 2016, right? 22 MR. RENARD: Objection to form. 23 A. I need to unpack that a bit. 24 There are two types of participants that 25 are -- may want to opt out of DRS. One is</p>	<p style="text-align: right;">Page 253</p> <p>1 WEINBERG, Ph.D. 2 there was an implied to publishers. 3 Q. Putting aside for the moment 4 your observation about what you considered 5 to be a fully-informed decision, we can 6 agree that as of June of 2016 it was 7 disclosed to both publishers and ad buyers 8 that Google was increasing or decreasing 9 revenue share per query to provide smarter 10 optimizations and maximize revenue, right? 11 MR. RENARD: Objection to form. 12 A. This statement, which, again, I 13 don't know who read this statement or how 14 well they understood it, this statement 15 definitely says that Google may increase or 16 decrease revenue share per query for the 17 aim of optimizing revenue and smarter 18 optimizations. 19 Q. Okay. And this statement also 20 says that publishers can opt out of that 21 revenue sharing function and optimization 22 if they want to, right? 23 A. This document states that, and 24 I will note that my rebuttal report and my 25 opening report acknowledge that, and I have</p>

<p>1 WEINBERG, Ph.D.</p> <p>2 cited in my rebuttal report how my</p> <p>3 deceptive -- my analysis of deceptive</p> <p>4 conduct takes that into consideration.</p> <p>5 Q. But the fact that people could</p> <p>6 opt out is disclosed, right, and true?</p> <p>7 MR. RENARD: Objection to form.</p> <p>8 A. Again, to unpack, advertisers</p> <p>9 could not opt out, so when you say people,</p> <p>10 I want to refine that to publishers, this</p> <p>11 document is stating that publishers can opt</p> <p>12 out. My rebuttal report acknowledges that</p> <p>13 and it does not impact any of my opinions.</p> <p>14 I do not have an opinion on whether</p> <p>15 advertisers/publishers were aware of this</p> <p>16 document, whether they read and understood</p> <p>17 it, how well Google advertised it, or</p> <p>18 whatever else is necessary for it to</p> <p>19 constitute a, quote, "disclosure."</p> <p>20 Q. Or if even one person was</p> <p>21 deceived by it, right?</p> <p>22 MR. RENARD: I object to form.</p> <p>23 A. When you say "it," could you</p> <p>24 clarify what you mean?</p> <p>25 Q. By this document.</p>	<p>Page 254</p> <p>1 WEINBERG, Ph.D.</p> <p>2 record 4:33 p.m.</p> <p>3 (Recess taken.)</p> <p>4 THE VIDEOGRAPHER: We are back</p> <p>5 on the record 4:51 p.m.</p> <p>6 BY MS. PATRICK:</p> <p>7 Q. All right, Professor, I now</p> <p>8 want to ask you about Bernanke. What was</p> <p>9 Bernanke?</p> <p>10 A. Bernanke was a conduct that GDN</p> <p>11 engaged in.</p> <p>12 Q. GDN is what?</p> <p>13 A. GDN I believe stands for Google</p> <p>14 Display Network. This was one of Google's</p> <p>15 ad buying tools. And there are multiple</p> <p>16 variants of Project Bernanke. I will</p> <p>17 describe properties that they all shared,</p> <p>18 and afterwards I'm happy to clarify further</p> <p>19 details.</p> <p>20 So when AdX was running let me</p> <p>21 call it a claim second price auction, or a</p> <p>22 second price auction, ignoring the other</p> <p>23 deceptive conduct like RPO and DRS, GDN was</p> <p>24 submitting, prior to Bernanke, its two</p> <p>25 highest bids, and what this has the effect</p>
<p>1 WEINBERG, Ph.D.</p> <p>2 A. If it is helpful to clarify,</p> <p>3 this is -- okay, this is a long document,</p> <p>4 but providing an opt-out as this document</p> <p>5 does, I don't consider it deceptive for</p> <p>6 Google to offer the opportunity to opt out</p> <p>7 in isolation. What I consider deceptive is</p> <p>8 not providing sufficient information to</p> <p>9 make an informed decision on opting out.</p> <p>10 For your question, in terms of</p> <p>11 being deceived by this document, that is</p> <p>12 correct that it is not within my assignment</p> <p>13 to determine whether an advertiser or</p> <p>14 publisher were deceived by this document.</p> <p>15 I add the remaining context to note that my</p> <p>16 report does not claim that providing an</p> <p>17 opt-out is deceptive in the first place.</p> <p>18 MS. PATRICK: Okay. I don't</p> <p>19 know how long we have been going, but</p> <p>20 let's stop for a minute.</p> <p>21 MR. RENARD: It has been about</p> <p>22 an hour.</p> <p>23 MS. PATRICK: Okay, take</p> <p>24 another break.</p> <p>25 THE VIDEOGRAPHER: Off the</p>	<p>Page 255</p> <p>1 WEINBERG, Ph.D.</p> <p>2 of is submitting your two highest bids to</p> <p>3 AdX is functionally just passing on the</p> <p>4 relevant bids. And there are two aspects</p> <p>5 to Bernanke that are relevant that I refer</p> <p>6 to in my report, I call one of them the</p> <p>7 collusion aspect, one of them the</p> <p>8 overbidding aspect, and what Bernanke did</p> <p>9 was it lowered the second highest bid</p> <p>10 submitted and raised the highest bid</p> <p>11 submitted, and in particular [REDACTED]</p> <p>[REDACTED]</p> <p>20 had the impact of potentially lowering the</p> <p>21 price that GDN would pay when it wins,</p> <p>22 because, for example, GDN's own second</p> <p>23 highest bid could become the clearing</p> <p>24 price, so lowering this would lower the</p> <p>25 clearing price. This is what I referred to</p>

<p style="text-align: right;">Page 258</p> <p>1 WEINBERG, Ph.D.</p> <p>2 as the collusive element. And increasing</p> <p>3 the highest bid would cause GDN to win more</p> <p>4 often, and that is what I referred to as</p> <p>5 the overbidding aspect.</p> <p>6 So that was true when AdX was</p> <p>7 using a second, let me call it a second</p> <p>8 price variant, because of the other</p> <p>9 deceptive conduct. When AdX switched to a</p> <p>10 first price variant the Alchemist or first</p> <p>11 price Bernanke has the same overbidding and</p> <p>12 collusive elements but the precise</p> <p>13 implementation differs.</p> <p>14 So in order to implement the</p> <p>15 collusion aspect, the Bernanke bids were</p> <p>16 optimized only against outside advertisers</p> <p>17 rather than against the entire advertising</p> <p>18 pool, including other GDN bidders, and the</p> <p>19 overbidding aspect is that the bids were</p> <p>20 optimized for a larger true value instead</p> <p>21 of the actual true value.</p> <p>22 So maybe to summarize I would</p> <p>23 say that Bernanke had a collusive aspect</p> <p>24 throughout all variants, which is that</p> <p>25 competition within GDN was lowered, and it</p>	<p style="text-align: right;">Page 260</p> <p>1 WEINBERG, Ph.D.</p> <p>2 A. It looks like Project Bernanke</p> <p>3 launched in 2013, although I want to note</p> <p>4 that a predecessor called Buy-Side DRS</p> <p>5 seems to have launched earlier, and some of</p> <p>6 my claims about Project Bernanke that I</p> <p>7 have explicitly stated in my rebuttal</p> <p>8 report also apply to Buy-Side DRS. Just to</p> <p>9 be super clear, what I mean is in my</p> <p>10 rebuttal report I have explicitly stated</p> <p>11 that some claims also apply to Buy-Side</p> <p>12 DRS.</p> <p>13 Q. And when did you learn about</p> <p>14 the switch from a first price payment rule</p> <p>15 to a threshold payment rule?</p> <p>16 A. I don't recall.</p> <p>17 Q. Did you learn it between the</p> <p>18 time you published your first report and</p> <p>19 the time you have published your rebuttal</p> <p>20 report?</p> <p>21 A. I also don't recall.</p> <p>22 Q. Do you think you learned about</p> <p>23 it from Professor Milgrom?</p> <p>24 A. I don't -- I don't recall where</p> <p>25 I learned it from.</p>
<p style="text-align: right;">Page 259</p> <p>1 WEINBERG, Ph.D.</p> <p>2 had an overbidding aspect which is that the</p> <p>3 winning bid was increased. And just to be</p> <p>4 super clear, let me clarify that I mean</p> <p>5 competition in the auction theory sense, as</p> <p>6 in competing for this particular</p> <p>7 impression, and not in any other way.</p> <p>8 Q. Okay. And what was the</p> <p>9 threshold payment rule as it pertained to</p> <p>10 Bernanke?</p> <p>11 A. So I don't remember exactly</p> <p>12 when, but I believe the Milgrom report</p> <p>13 claims that Global Bernanke switched from a</p> <p>14 first price payment rule to a threshold</p> <p>15 payment rule. I don't remember the precise</p> <p>16 date he claims. But to be clear, I do not</p> <p>17 object to whatever date he claims. I would</p> <p>18 take that at face value. And a threshold</p> <p>19 payment rule refers to the fact that a</p> <p>20 bidder is paying their minimum bid to win,</p> <p>21 whereas a first price payment rule refers</p> <p>22 to the fact that a bidder is paying their</p> <p>23 bid in the auction.</p> <p>24 Q. Okay. And when did Bernanke</p> <p>25 start?</p>	<p style="text-align: right;">Page 261</p> <p>1 WEINBERG, Ph.D.</p> <p>2 Q. Can you say definitively that</p> <p>3 you knew about threshold pricing before you</p> <p>4 read Professor Milgrom's report?</p> <p>5 A. I can't definitively say that.</p> <p>6 Yeah, that's the end of my answer.</p> <p>7 Q. Okay. So it is possible at</p> <p>8 least that you first learned of threshold</p> <p>9 pricing from Professor Milgrom's report,</p> <p>10 right?</p> <p>11 A. That is possible, yes.</p> <p>12 Q. And it is fair to say that the</p> <p>13 information about the threshold payment</p> <p>14 rule changed some of your opinions in your</p> <p>15 initial report about Global Bernanke and</p> <p>16 Alchemist?</p> <p>17 A. No, I don't think that's</p> <p>18 accurate. Do you have a specific --</p> <p>19 Q. Yeah, we will go through it</p> <p>20 piece by piece.</p> <p>21 In paragraph 19 of your</p> <p>22 rebuttal report, Exhibit 2, you say --</p> <p>23 A. Sorry, paragraph 19?</p> <p>24 Q. Yes.</p> <p>25 A. Not page?</p>

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<p style="text-align: right;">Page 262</p> <p>1 WEINBERG, Ph.D.</p> <p>2 Q. Page 10, paragraph 19. You say 3 "Project Bernanke did not benefit Google 4 Display Network advertisers during the 5 periods when it used a first price payment 6 rule."</p> <p>7 Do you see that?</p> <p>8 A. Yes.</p> <p>9 Q. Stated affirmatively, would you 10 agree that that means that Bernanke did 11 benefit advertisers when the system used a 12 threshold payment rule?</p> <p>13 MR. RENARD: Objection to form.</p> <p>14 A. I don't have an opinion on 15 that, and that would take me some time to 16 think through a new opinion that's 17 technical in nature.</p> <p>18 Q. All right. So at least as you 19 sit here today you have not excluded the 20 possibility that Bernanke was beneficial to 21 advertisers during periods when it used a 22 threshold payment rule?</p> <p>23 A. That is correct. My report 24 does not exclude the possibility that 25 Bernanke was beneficial to advertisers</p>	<p style="text-align: right;">Page 264</p> <p>1 WEINBERG, Ph.D.</p> <p>2 when Bernanke was using a threshold payment 3 rule advertisers would not have been better 4 off bid shading because bidding truthfully 5 was optimal?</p> <p>6 MR. RENARD: Objection to form.</p> <p>7 A. As I stated in my opening 8 report and is also commonly known within 9 auction theory, in an auction that uses 10 threshold payments, advertisers are not 11 better off bid shading.</p> <p>12 Q. They are better off bidding 13 truthfully?</p> <p>14 A. Just to repeat the previous 15 context for that question, in an auction 16 with threshold payments, advertisers are 17 best off bidding truthfully, that's 18 correct.</p> <p>19 Q. Okay. And so that means, then, 20 that in periods without the first price 21 payment rule where instead threshold 22 payment was the norm, Bernanke and its 23 later manifestations did not injure 24 advertisers because they were presenting 25 truthful bids, right?</p>
<p style="text-align: right;">Page 263</p> <p>1 WEINBERG, Ph.D.</p> <p>2 during a period when AdX was running a 3 second price variant and Bernanke was using 4 a threshold payment rule.</p> <p>5 Q. Okay. And, similarly, if I can 6 direct your attention to paragraph 98 --</p> <p>7 A. Of rebuttal?</p> <p>8 Q. Uh-huh. You say that "Project 9 Bernanke or Global Bernanke or Buy-Side DRS 10 would have caused Google Display Network 11 advertisers to report" -- I'm sorry, let me 12 try again, rephrase.</p> <p>13 In paragraph 98 you say that 14 "With a first price payment rule Buy-Side 15 DRS, Bernanke and Global Bernanke would 16 have caused Google Display Network 17 advertisers to report their true values to 18 the network when they would have been 19 better off bid shading," right?</p> <p>20 MR. RENARD: Objection to form.</p> <p>21 A. I just want to note it is a 22 slight misquote, but I consider the way you 23 read it to be an accurate representation of 24 the letter of the text.</p> <p>25 Q. Okay. And does it follow that</p>	<p style="text-align: right;">Page 265</p> <p>1 WEINBERG, Ph.D.</p> <p>2 MR. RENARD: Objection to form.</p> <p>3 Q. Let me rephrase it. 4 That means, then, that in 5 periods without the first price payment 6 rule and where instead the threshold 7 payment rule was the norm, advertisers 8 submitting truthful bids were not injured 9 or deceived by Bernanke?</p> <p>10 MR. RENARD: Same objection.</p> <p>11 A. That is not an opinion I have. 12 I can share that for the opinions of mine 13 where I explicitly add a parenthetical or 14 footnote or other clarification of "with 15 first price payment rule," those opinions 16 as stated only apply to the variants with 17 first price payment rule, and those 18 conclusions, I am not claiming them with 19 threshold payments.</p> <p>20 Q. Okay. And so if I look at page 21 83 of your report at footnote 39 -- 39? -- 22 no, 349, sorry, you are talking there at -- 23 I'm sorry, footnote 348 and then 349. You 24 first say during periods when Bernanke and 25 Global Bernanke used a first price payment</p>

<p style="text-align: right;">Page 266</p> <p>1 WEINBERG, Ph.D. 2 option the assumption you make, or the 3 assumption made by Professor Milgrom holds 4 only for sophisticated advertisers and not 5 for default advertisers. Do you see that? 6 A. Yes, I see that footnote. 7 Q. Explain, please. 8 A. Without having the Milgrom 9 report, I believe I can answer your 10 question, but I will do so to the best of 11 my ability given the text that's here. 12 Q. That's fine. 13 A. So when I write 14 "Specifically" -- sorry, just to confirm, 15 you asked me just footnote 348? 16 Q. Correct. 17 A. So when I write "Specifically, 18 when the report invokes the 'revelation 19 principle' in its proof, the report 20 implicitly assumes that bidders are best 21 responding in Bayes-Nash equilibrium," 22 what that means is there is an economic 23 concept called Bayes-Nash equilibrium and 24 what that refers to is in a game where 25 there are multiple participants, each of</p>	<p style="text-align: right;">Page 268</p> <p>1 WEINBERG, Ph.D. 2 where the participants' information is 3 drawn independently, there is a direct 4 implementation of that Bayes-Nash 5 equilibrium with an incentive compatible 6 auction. 7 So what the rest of footnote 8 348 is saying is that during periods where 9 Project Bernanke and Global Bernanke use a 10 first price payment rule, default 11 advertisers would not participate in 12 Bayes-Nash equilibrium because default 13 advertisers would bid their true value, 14 which is not best responding, because they 15 would more optimally shade their bids. But 16 for a sophisticated and fully-informed 17 advertisers, this is exactly what that 18 definition means, that they would somehow 19 find a way to be in Bayes-Nash equilibrium 20 no matter whether Bernanke was disclosed or 21 not. 22 Q. Okay. And so potentially in 23 that universe sophisticated advertisers, 24 even in a first price payment rule, might 25 not be deceived by Bernanke or Global</p>
<p style="text-align: right;">Page 267</p> <p>1 WEINBERG, Ph.D. 2 those participants have some private 3 information that is drawn from a 4 distribution. Each of those bidders can 5 form a belief about what the other bidders 6 are doing knowing that their private 7 information is drawn from whatever 8 distribution it is drawn from, and a bidder 9 could be best responding to what they 10 believe the other bidders are doing in 11 expectation over the bidders drawing their 12 information from these distributions. 13 So what a Bayes-Nash 14 equilibrium is is when all bidders are 15 simultaneously forming accurate beliefs 16 about what the others are doing, forming 17 accurate beliefs about what their private 18 information is drawn from, and best 19 responding to those beliefs. 20 I assume, because I wrote the 21 report invokes the revelation principle, 22 this means that Milgrom's proof of theorem 23 1 uses the revelation principle, and what 24 the revelation principle means is that for 25 every Bayes-Nash equilibrium in a domain</p>	<p style="text-align: right;">Page 269</p> <p>1 WEINBERG, Ph.D. 2 Bernanke, right? 3 A. I, again, don't know that -- 4 sorry, I don't know that I have an opinion 5 on, and it wasn't in my assignment to 6 determine whether publishers or advertisers 7 were deceived, but it is my opinion that 8 Google's conduct surrounding Project 9 Bernanke and Global Bernanke during periods 10 where it used the first price payment rule 11 was deceptive for this particular reason. 12 Q. Was deceptive for default 13 advertisers, right, but not necessarily for 14 sophisticated advertisers? 15 MR. RENARD: Objection to form. 16 A. No, I think Bernanke and Global 17 Bernanke and Buy-Side DRS using a first 18 price payment rule are just deceptive. 19 Q. Okay. But you have not tested 20 that by reading, for example, the 21 depositions of any sophisticated investors 22 to know what they might have known or 23 considered about it, right? 24 MR. RENARD: Objection to form. 25 Q. Sophisticated advertisers, I'm</p>

<p style="text-align: right;">Page 270</p> <p>1 WEINBERG, Ph.D. 2 sorry, I misspoke. 3 MR. RENARD: Same objection. 4 A. It wasn't part of my assignment 5 to determine which advertisers were 6 sophisticated or not sophisticated, and as 7 a result I don't, excuse me, I don't know 8 what particular advertisers knew or did not 9 know about Project Bernanke. What I know 10 is that Google did not disclose it and that 11 I find it deceptive.</p> <p>12 Q. All right. And what you do 13 agree is that during periods where Project 14 Global Bernanke used threshold payments, 15 both sophisticated and default advertisers 16 would best respond by bidding truthfully 17 because the auction was actually truthful, 18 right?</p> <p>19 MR. RENARD: Objection to form. 20 Q. I read your footnote correctly; 21 did I not? 22 A. There is a slight nuance. 23 There are parts of the footnotes you read 24 correctly, which is that when Global 25 Bernanke used threshold payments, it is in</p>	<p style="text-align: right;">Page 272</p> <p>1 WEINBERG, Ph.D. 2 apply. 3 Q. Okay. So just to be clear, in 4 any period where a Bernanke project used 5 threshold payments, both sophisticated and 6 default advertisers would best respond by 7 bidding truthfully because the auction is 8 actually truthful, right? 9 A. Yes, that is what I wrote. It 10 looks like I would nitpick against my own 11 writing. I think there was an implied "for 12 GDN bidders" at the end of that 13 parenthetical. That would have been what I 14 assert if I explicitly wrote if I'm being 15 extra critical. 16 Q. And Alchemist used a threshold 17 pricing, not a first price payment rule, 18 right? 19 A. I forgot the question, but I 20 think I remember enough -- 21 Q. Well, let me ask it again. 22 Alchemist used a first, sorry, Alchemist 23 used a threshold pricing, not a first price 24 payment rule, right? 25 A. Yes, that is correct.</p>
<p style="text-align: right;">Page 271</p> <p>1 WEINBERG, Ph.D. 2 GDN advertisers' best interest to bid their 3 true value, so that is correct. The 4 question went a small step further and said 5 the auction was truthful, and I would 6 disagree with that because the auction was 7 not truthful for non-GDN bidders because of 8 RPO and DRS. 9 Q. Okay. So let me just read your 10 footnote exactly. 11 A. Can I ask, is this 349? 12 Q. No, it is 348. 13 A. 348, sorry. 14 Q. Last sentence in 348 says 15 "During periods where Project Global 16 Bernanke," and I think you must have meant 17 Project Bernanke and Global Bernanke, do 18 you think you meant both? 19 A. I believe the switch from 20 Bernanke to Global happened before Milgrom 21 claims the switch from first to threshold 22 occurred, so I don't believe there is a 23 period where non-Global Bernanke used 24 threshold periods -- payments. But if 25 there were such a period, then it would</p>	<p style="text-align: right;">Page 273</p> <p>1 WEINBERG, Ph.D. 2 Q. And so the same would be true, 3 that is in a circumstance where Alchemist 4 was operative as to advertisers, they were 5 best responding by bidding truthfully 6 because that auction was actually truthful? 7 A. Basically, yes. I'm just going 8 to add some qualifiers, which is that 9 during periods where Alchemist was active 10 and using a threshold payment rule, which I 11 believe to be all of the periods that 12 Alchemist was active, GDN bidders would 13 have best responded by bidding their true 14 value into the Alchemist. 15 Q. And in those circumstances that 16 we have described where Project Global 17 Bernanke is using threshold payments or 18 where Alchemist is using threshold 19 payments, there is no deceit operating on 20 bidders as to the amount of their bid 21 because they are incentivized to bid 22 truthfully, right? 23 MR. RENARD: Objection to form. 24 A. I, again, don't believe I have 25 an opinion on that. That is a technical</p>

<p style="text-align: right;">Page 274</p> <p>1 WEINBERG, Ph.D. 2 claim, claiming that there is no deceit is 3 a strong technical claim that would take me 4 a lot of time to think through. 5 What I can say is that for my 6 claims that explicitly discuss first price 7 payment rule, not threshold payment, 8 something like that, I intend for those 9 conclusions to not apply without that 10 assumption.</p> <p>11 Q. Right. So therefore to state 12 it affirmatively, you have not expressed an 13 opinion that the threshold payment rule, 14 when it operated in Global Bernanke or in 15 Alchemist, was deceptive to any Google 16 Display Network advertiser, right?</p> <p>17 A. Can you repeat the question one 18 more time? I'm ready to answer.</p> <p>19 Q. So therefore to state it 20 affirmatively, you have not expressed an 21 opinion that the threshold payment rule, 22 when it operated in Global Bernanke or in 23 Alchemist, was deceptive to any Google 24 Display Network advertiser, true?</p> <p>25 A. That is correct. I'm going to</p>	<p style="text-align: right;">Page 276</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to the 3 statement and the question at the end. 4 Q. Let me rephrase it. I don't 5 need the colloquy. 6 As you sit here today, there is 7 nothing in your mind that sticks out about 8 a product called AdSense? 9 A. I don't know if I got the name 10 right. Is Ad Sense what GDN used to bid on 11 non-AdX exchanges? 12 Q. I can't answer your question. 13 A. Okay. Then maybe let me state 14 the following: Some of the conclusions I 15 draw are conclusions about auctions and ad 16 buying pools and publishers. It is 17 possible that those conclusions would apply 18 to AdSense, but I have not -- I certainly 19 have not singled out AdSense for any 20 conclusions, and the term AdSense sounds 21 like something I have read before, but I 22 did not -- I'm comfortable saying I did not 23 do any study specific to AdSense. 24 Q. How about something called 25 AdMob?</p>
<p style="text-align: right;">Page 275</p> <p>1 WEINBERG, Ph.D. 2 repeat it just to be absolutely clear. I 3 have not expressed an opinion that Bernanke 4 or Global Bernanke during periods where it 5 used threshold payment rules was deceptive 6 towards GDN advertisers. 7 Q. Okay. I'm going to change 8 topics now, sir. I want to talk to you 9 about what you call the Google display 10 advertising RTB ecosystem. So I'm going to 11 direct your attention to Exhibit 2, your 12 rebuttal report, at paragraph 28. And you 13 refer there to include in that definition, 14 Google's display advertising and platforms, 15 and I want to ask you whether the opinions 16 you have expressed here in this report 17 address AdSense in any way? 18 A. There are a lot of different 19 products, and I would need your help with a 20 reminder of what exactly is AdSense to 21 answer that. 22 Q. If you don't remember it, I'm 23 going to assume it was not significant 24 enough in your opinion to stick in your 25 mind. How is that?</p>	<p style="text-align: right;">Page 277</p> <p>1 WEINBERG, Ph.D. 2 MR. RENARD: Objection to the 3 form. 4 A. So for AdMob I, again, want to 5 say that for my conclusions that discuss 6 auctions, they could apply to AdMob but I 7 am not offering any opinions specialized to 8 AdMob. 9 Q. What about DV360? 10 MR. RENARD: Objection to form. 11 A. DV360, I definitely know what 12 it is. DV360 is an ad buying tool of 13 Google's that I believe was marketed 14 primarily for large publishers, whereas GDN 15 was marketed primarily towards small 16 publishers. 17 So, for example, if you look on 18 page 5, section header G, I'm going to read 19 the corrected version. This was one of the 20 places the errata touched. I think it will 21 be obvious to you what the errata is when 22 you read it. But I say "GDN and DV360's 23 exemptions from DRS demonstrates 24 preferential treatment." So that is an 25 example where I specifically mentioned</p>

<p style="text-align: right;">Page 278</p> <p>1 WEINBERG, Ph.D. 2 DV360. 3 Q. Okay. But have you expressed 4 any opinion that DV360 was deceptive in 5 fact to any individual ad buyer or ad 6 seller? 7 MR. RENARD: Objection to form. 8 A. No, I don't believe I have 9 expressed any opinions that DV360 as a 10 product was deceptive towards advertisers. 11 Q. Or ad sellers? 12 A. Let me add some nuance to the 13 previous one. I do think -- sorry, I do 14 opine and believe that GDN and DV360's 15 exemptions from DRS demonstrate 16 preferential treatment. Because those were 17 not disclosed, I consider that to be 18 deceptive. However, I would say that is 19 DRS being deceptive. So to clarify my 20 previous answer, I was not attributing the 21 product DV360 as being deceptive. 22 So to repeat, while noting that 23 some of my conclusions regarding deception 24 involve DV360, I do not offer an opinion 25 that DV360 as a product was deceptive</p>	<p style="text-align: right;">Page 280</p> <p>1 WEINBERG, Ph.D. 2 deposition you referred to claims in 3 reference to certain statements in your 4 report. Do you recall that? 5 A. Yes. 6 Q. Can you tell us whether or not 7 by claims you meant opinions? 8 A. Yes, I use those terms 9 synonymously. 10 MR. RENARD: That's all I have. 11 Thank you, sir. 12 THE VIDEOGRAPHER: With that, 13 we are off the record and concluded for 14 the day, 5:32 p.m. eastern standard 15 time. 16 17 [TIME NOTED: 5:32 p.m.] 18 19 MATTHEW WEINBERG, Ph.D. 20 21 Subscribed and sworn to before me this _____ 22 day of _____, 2024. 23 _____ Notary Public 24 25</p>
<p style="text-align: right;">Page 279</p> <p>1 WEINBERG, Ph.D. 2 towards advertisers or publishers. 3 MS. PATRICK: Okay. Let me 4 just take a quick break. I think I 5 might be done, sir. 6 THE VIDEOGRAPHER: Off the 7 record, 5:30 p.m. 8 (Recess taken.) 9 THE VIDEOGRAPHER: Back on the 10 record 5:31 p.m. 11 BY MS. PATRICK: 12 Q. Professor, before I conclude, 13 is there anything over the course of the 14 day that you think you need to change or 15 correct in your answers? 16 A. No. 17 MS. PATRICK: Thank you very 18 much for your time. I appreciate it 19 very much. 20 MR. RENARD: I have just one 21 small thing that will not make you miss 22 your car or your flight. 23 EXAMINATION BY MR. RENARD: 24 Q. Professor, you mentioned 25 several times during the course of your</p>	<p style="text-align: right;">Page 281</p> <p>1 INDEX 2 3 WITNESS EXAMINATION BY PAGE 4 WEINBERG PATRICK 5 5 RENARD 279 6 7 EXHIBITS 8 WEINBERG DESCRIPTION PAGE 9 Exhibit 1 Expert Report of 9 Matthew Weinberg 10 Exhibit 2 Rebuttal Report of 12 Matthew Weinberg 11 Exhibit 3 Curriculum Vitae 19 Exhibit 4 Errata to September 9, 60 12 Exhibit 5 GOOG-AT-MDL-C-000035250 163 Exhibit 6 GOOG-AT-MDL-C-000086317- 185 13 000086320 Exhibit 7 GOOG-AT-MDL-C-000035251 197 14 Exhibit 8 GOOG-AT-MDL-C-000035252 213 Exhibit 9 Google definition of 223 15 "offset" Exhibit 10 GOOG-AT-MDL-C-000015769- 247 16 000015788 17 DIRECTIONS NOT TO ANSWER 18 Page Line 55 22 19 56 20 91 20 20 98 21 107 9 21 213 11 22 REQUESTS 23 Page Line 24 71 8 25</p>

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1
2 CERTIFICATION
3
4 I, TODD DeSIMONE, a Notary Public for
5 and within the State of New York, do hereby
6 certify:

7 That the witness whose testimony as
8 herein set forth, was duly sworn by me; and
9 that the within transcript is a true record
10 of the testimony given by said witness.
11 I further certify that I am not related
12 to any of the parties to this action by
13 blood or marriage, and that I am in no way
14 interested in the outcome of this matter.
15 IN WITNESS WHEREOF, I have hereunto set
16 my hand this 8th day of October, 2024.
17
18 
19 TODD DESIMONE
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21 * * *
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1 ERRATA SHEET
2
3 CASE NAME: TEXAS v. GOOGLE
4 DATE OF DEPOSITION: 10/8/24
5 WITNESS' NAME: MATTHEW WEINBERG, Ph.D.

6 PAGE/LINE(S)/ CHANGE REASON

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21 MATTHEW WEINBERG, Ph.D.
22 SUBSCRIBED AND SWEORN TO
BEFORE ME THIS DAY
23 OF October, 2024.
24
NOTARY PUBLIC
25 MY COMMISSION EXPIRES